

TC-RX390

SERVICE MANUAL

US Model
Canadian Model
AEP Model



Model Name Using Similar Mechanism	TC-RX370
Tape Transport Mechanism Type	TCM-190RB12CJ

SPECIFICATIONS

Recording system

4-track 2-channel stereo

Fast winding time

Approx. 90 sec. (with Sony C-60 cassette)

Bias

AC bias

Heads

Erasing head \times 1 (F&F head)

Motors

Playback/Recording head \times 1 (SD head)

Signal-to-noise ratio (at peak level)

Capstan motor \times 1 (DC servo motor)

Cassette (Dolby NR OFF)

Reel motor \times 1 (DC motor)

58 dB

57 dB

55 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion

0.4% (with Sony TYPE I, 160 nWb/m,
315 Hz, 3rd H.D.)

1.8% (with Sony TYPE IV, 250 nWb/m,
315 Hz, 3rd H.D.)

Frequency response (DOLBY NR OFF)

Type IV cassette (Sony Metal-S>Select)	30 - 15,000 Hz (± 3 dB, IEC) 30 - 13,000 Hz [± 3 dB (-4 dB recording)]
Type II cassette (Sony UX-S)	30 - 15,000 Hz (± 3 dB, IEC)
Type I cassette (Sony HF-S)	30 - 14,000 Hz (± 3 dB, IEC)

Wow and flutter

$\pm 0.13\%$ W.Peak (IEC)

0.07% W.RMS (NAB)

$\pm 0.18\%$ W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 k ohms
	Load impedance	Over 10 k ohms
Headphones (stereo phono jack)	Output level	1 mW at a load impedance of 32 ohms

General

Power requirements

US, Canadian Model : 120V AC, 60 Hz
AEP Model : 220-230V AC, (or 240V AC adjustable by Sony personnel), 50/60 Hz

Power consumption

21 W

Dimensions

Approx. 430 \times 123 \times 300 mm (w/h/d)
(17 \times 4 $\frac{7}{8}$ \times 11 $\frac{1}{8}$ inches)

Weight

including projecting parts and controls
Approx. 3.8 kg (8 lbs 6 oz)

Supplied accessories

Audio connecting cords (2)

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

STEREO CASSETTE DECK
SONY[®]



TABLE OF CONTENTS

<i>Section</i>	<i>Title</i>	<i>Page</i>
specifications		1
Safety Check-out.....		3
1. GENERAL		
1-1. Identifying the Parts		4
2. DISASSEMBLY		
2-1. Front Panel		5
2-2. Mechanism Deck		5
2-3. Head		6
2-4. Fitting Base Block		6
2-5. Motor.....		6
3. BLOCK DIAGRAM		
4. EXPLANATION OF IC TERMINALS		
5. ADJUSTMENTS		
5-1. Mechanical Adjustments		11
5-2. Electrical Adjustments		11
6. DIAGRAMS		
6-1. Circuit Boards Location.....		14
6-2. Printed Wiring Boards		15
6-3. Schematic Diagram (SYSTEM CONTROL SECTION).....		19
6-4. Schematic Diagram (AUDIO SECTION)		24
7. EXPLODED VIEWS		
7-1. Chassis Section		27
7-2. Front Panel Section		28
7-3. Mechanism Section1.....		29
7-4. Mechanism Section2.....		30
8. ELECTRICAL PARTS LIST		

MODEL IDENTIFICATION
(*Specification Label*)

SONY® MODEL NO. **TC-RX390**

STEREO CASSETTE DECK



US, Canadian model : AC 120V 60Hz 21W
AEP model : AC 220-230V~50 /60Hz 21W

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A.)

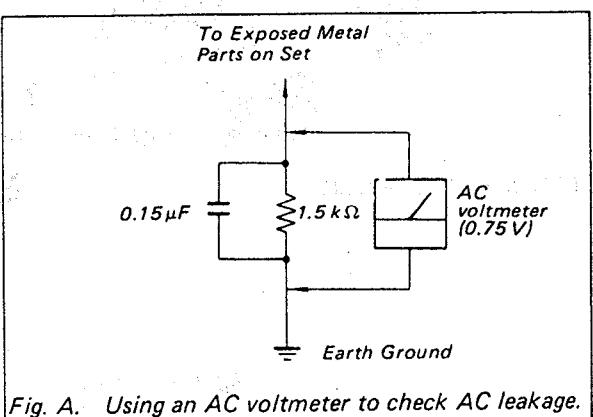


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

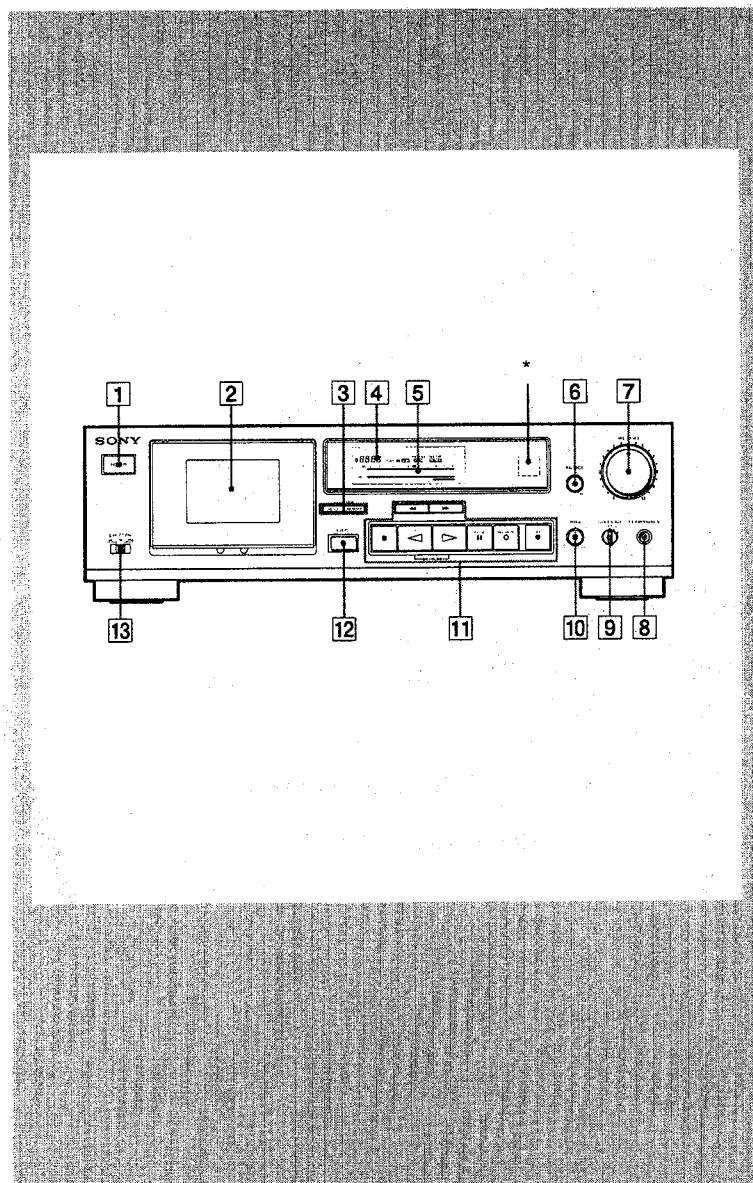
ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

This section is extracted from instruction manual.

1-1. IDENTIFYING THE PARTS



For details, refer to the page number indicated in parenthesis.

- 1 POWER switch
- 2 Cassette holder
- 3 Counter buttons
- RESET button
- MEMORY button
- 4 DIGITAL COUNTER
- 5 PEAK LEVEL METER
- 6 BALANCE control
- 7 REC (recording) LEVEL control
- 8 HEADPHONES jack (stereo phone jack)
- 9 DOLBY NR (noise reduction) switch
- 10 BIAS control
- 11 Tape operation buttons
- ◀ (leftward fast winding) button
- ▶ (rightward fast winding) button
- (stop) button
- ◀ (reverse play) button
- ▶ (forward play) button
- II PAUSE button
- REC MUTE (record muting) button
- REC (recording) button
- 12 ▲ (eject) button
- 13 DIRECTION mode switch

* Remote control sensor
You can remotely control this cassette deck with:

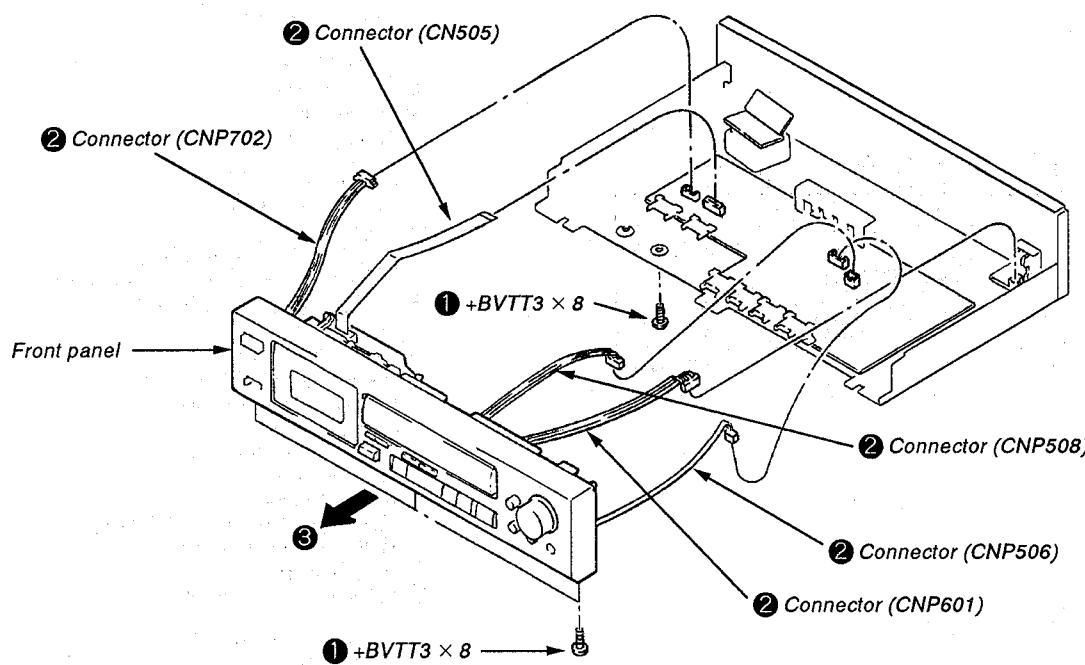
- A remote commander that came with a Sony amplifier or receiver if it has the mark and cassette deck control capability.
- An optional Sony remote commander with the mark and cassette deck control capability.

SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

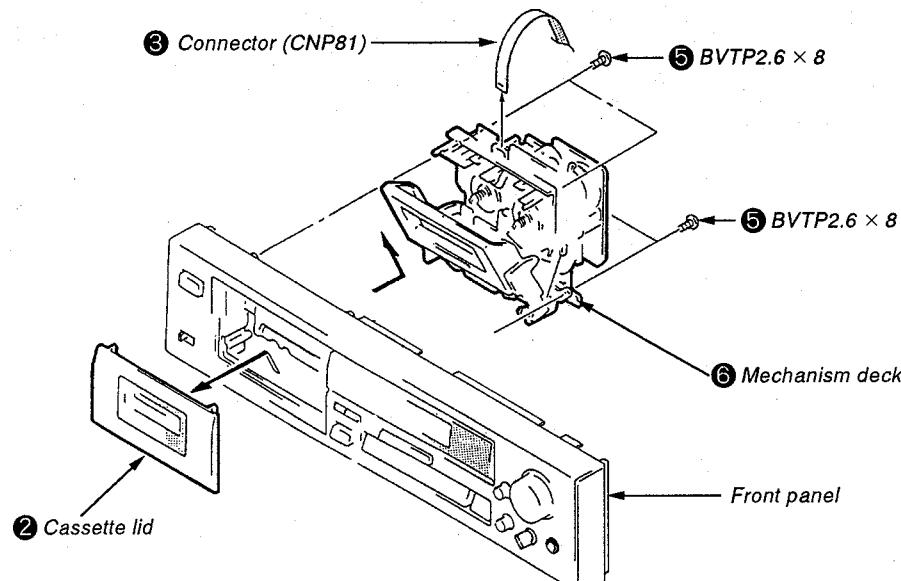
CASE
Unscrew the four case attachment screws M3 × 8 and remove the case.

2-1. FRONT PANEL

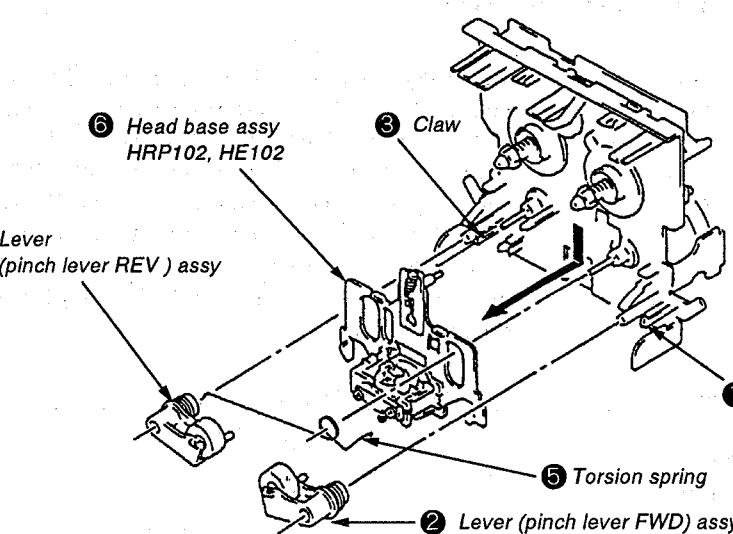


2-2 MECHANISM DECK

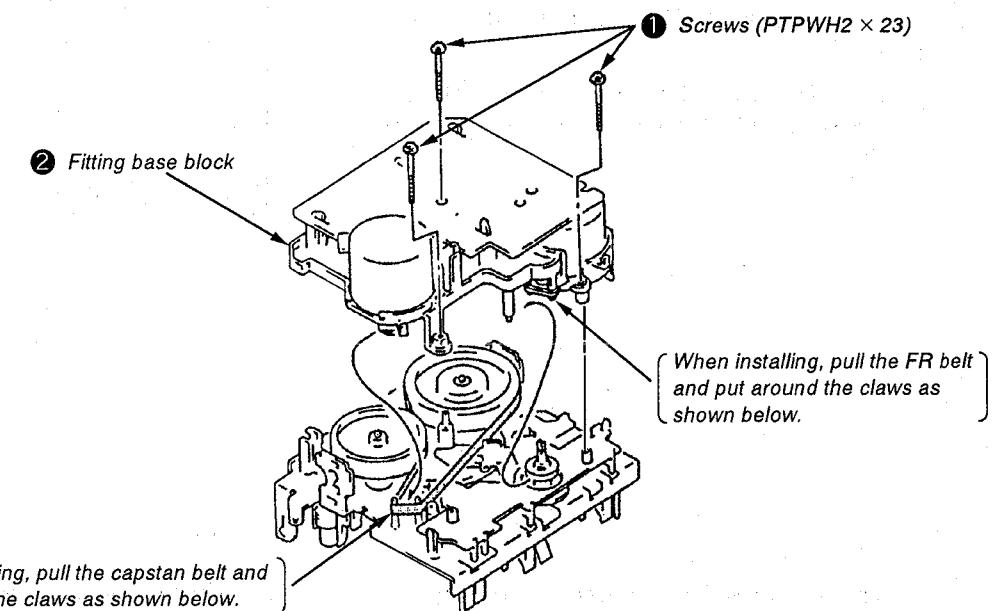
① Press the eject button.



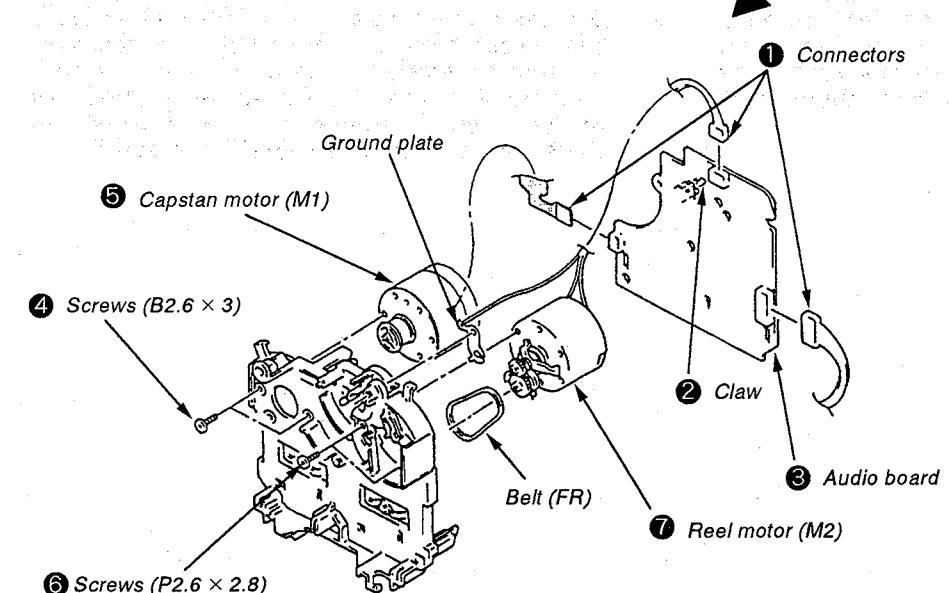
2-3. HEAD



2-4. FITTING BASE BLOCK

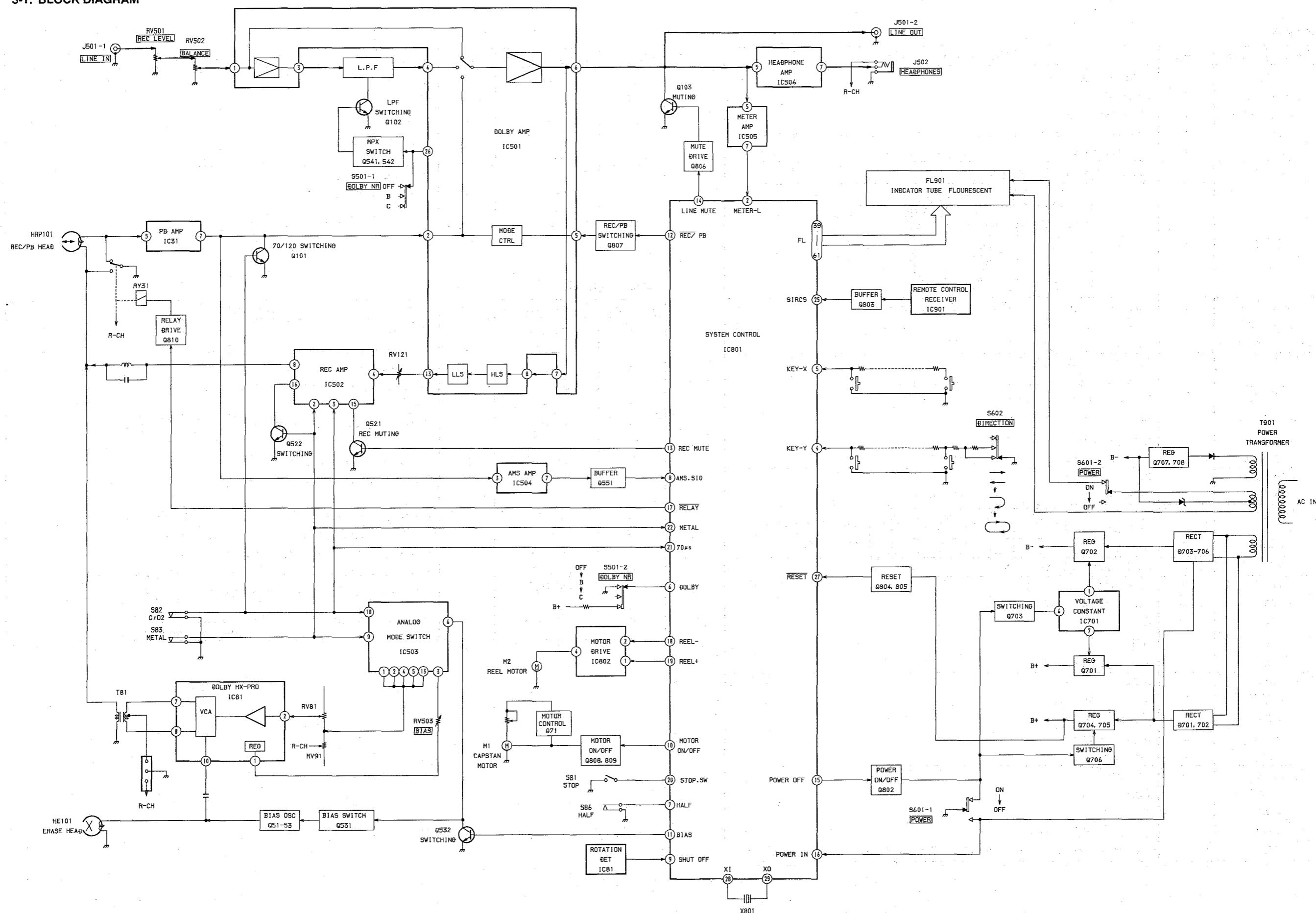


2-5. MOTOR



SECTION 3 BLOCK DIAGRAM

3-1. BLOCK DIAGRAM



SECTION 4
EXPLANATION OF IC TERMINALS

IC801 M50940-395SP

Pin. No.	Terminal name	I/O	Terminal explanation																																	
1	VREF	I	Reference voltage 5V																																	
2	METER LCH	I	Meter level Lch																																	
3	METER RCH	I	Meter level Rch																																	
4	KEY Y	I	0V = stop, 0.8V = rew, 1.7V = ff, 2.6V = rec, 3.4V = ssw ⇄, 4.2V = ⇒, 5V = ⇢																																	
5	KEY X	I	0V = pause, 0.8V = fwd, 1.7V = rev, 2.6V = recm, 3.4V = reset, 4.2V = memory																																	
6	DOLBY	I	OFF : 0 - 2.2V, B : 2.2 - 4.8V, C : 4.8V -																																	
7	HALF	I	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2">Switch status</td> <td>ON...Available</td> <td></td> </tr> <tr> <td colspan="2"></td> <td>OFF...Not Available</td> <td></td> </tr> <tr> <td>REC A</td> <td>REC B</td> <td>HALF</td> <td>Input Voltage</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>OFF</td> <td>5V</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>ON</td> <td>3.9V</td> </tr> <tr> <td>OFF</td> <td>OFF</td> <td>ON</td> <td>2.8V</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>ON</td> <td>2V</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>ON</td> <td>1V</td> </tr> </table>		Switch status		ON...Available				OFF...Not Available		REC A	REC B	HALF	Input Voltage	OFF	OFF	OFF	5V	ON	OFF	ON	3.9V	OFF	OFF	ON	2.8V	ON	ON	ON	2V	OFF	ON	ON	1V
Switch status		ON...Available																																		
		OFF...Not Available																																		
REC A	REC B	HALF	Input Voltage																																	
OFF	OFF	OFF	5V																																	
ON	OFF	ON	3.9V																																	
OFF	OFF	ON	2.8V																																	
ON	ON	ON	2V																																	
OFF	ON	ON	1V																																	
8	AMS. SIG	I	Ams signal input 2.5V < MUSIC, 2.5V > not MUSIC																																	
9	SHUT OFF	I	Supply pulse																																	
10	MOTOR ON/OFF	O	Capstan motor. 5V = ON, 0V = OFF																																	
11	BIAS	O	Bias osc 5V = ON																																	
12	REC/PB	O	Recording/Playback selector for Dolby IC select 0V = Record, 5V = Playback																																	
13	REC MUTE	O	Rec out mute. 5V = MUTE																																	
14	LINE MUTE	O	Line out mute. 0V = MUTE																																	
15	POWER OFF	O	0V = Power OFF, cut OFF = Power ON																																	
16	POWER IN	I	0V = Power OFF																																	
17	RELAY	O	Relay selector. 5V = Record, 0V = Playback																																	
18	REEL -	O	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>trg</td> <td>ff</td> <td>play</td> <td>stop</td> </tr> <tr> <td>0</td> <td>1</td> <td>open</td> <td>0</td> </tr> </table> Reel motor -	trg	ff	play	stop	0	1	open	0	The open is high impedance.																								
trg	ff	play	stop																																	
0	1	open	0																																	
19	REEL +	O																																		
20	STOP. SW	I	Mecha stop mode SW. 5V = stop																																	
21	70 μ S	I	Tape type 2. 5V = ON																																	
22	METAL	I	Tape type 4. 5V = ON																																	
23	NC	I	GND																																	
24	NC	I	GND																																	
25	SIRCS	I	Sircs signal in																																	
26	CNVSS	I	GND																																	
27	RESET	I	Reset. 0V = Reset																																	
28	XIN	I	System clock in																																	
29	XOUT	O	System clock out																																	
30	CXIN	I	Not used																																	
31	CXOUT	O	Not used																																	
32	VSS	I	GND																																	
33	NC	O	Not used																																	
34	VERSION	I	5V = rev, 0V = oneway																																	
35	TEST	I	Test mode selector. 5V = normal, 0V = test mode																																	

Pin. No.	Terminal name	I/O	Terminal explanation	
36	NC	I	GND	
37	NC	I	GND	
38	- 21V	I	- 21V	
39 - 54	FL-a - p	O	FLT segment	
55 - 61	FL-g5 - g1	O	FLT grid	
62	NC	O	Not used	
63	AVCC	I	Analog power supply in + 5V	
64	VCC	I	Power supply in + 5V	

IC502 CXA1579P

Pin. No.	Terminal name	I/O	Terminal explanation	
1	SPEED	I	GND	
2	METAL	I	Metal tape selector terminal "H" : METAL	
3	70 μ S	I	CrO ₂ tape selector terminal "H" : CrO ₂	
4	REC IN1	I	Recording equalizer amp input terminal	
5	GND		GND	
6	BOOST1	I	External capacitor for low-pass boost connecting terminal	
7	VEE		- 7.5V	
8	REC OUT1	O	Recording equalizer amp output terminal	
9	REC OUT2	O	Recording equalizer amp output terminal	
10	VCC		+ 7.5V	
11	BOOST2		External capacitor for low-pass boost connecting terminal	
12	IREF	O	Standard current setting terminal of monolithic filter	
13	REC IN2	I	Recording equalizer amp input terminal	
14	REC CAL	I	Recording calibration terminal "H" : Recording level gain down	
15	REC MUTE	I	Recording Mute ON/OFF selector terminal "H" : Mute OFF "L" : Mute ON	
16	GP CAL	I	High-pass calibration terminal "H" : High-pass level gain down "L" : High-pass level gain up	

SECTION 5 ADJUSTMENTS

5-1. MECHANICAL ADJUSTMENTS

PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab:

record/playback/erase head	pinch roller
rubber belts	capstan
idle	
- Demagnetize the record/playback head with a head demagnetizer. (Head demagnetizer do not approach for the erase head.)
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

Torque Measurement

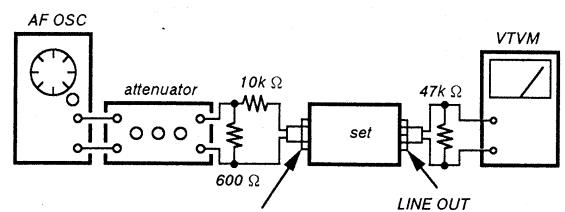
Torque	Torque	Meter reading
Forward	CQ-102C	30 to 65g·cm (0.42 to 0.9 oz·inch)
Forward back tension	CQ-102C	1 to 6g·cm (0.014 to 0.08 oz·inch)
Reverse	CQ-102RC	30 to 65g·cm (0.42 to 0.9 oz·inch)
Reverse back tension	CQ-102RC	1 to 6g·cm (0.014 to 0.08 oz·inch)
FF/REW	CQ-201B	70 to 120g·cm (0.98 to 1.67 oz·inch)

5-2. ELECTRICAL ADJUSTMENTS

PRECAUTION

- The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
- The adjustments and measurement should be performed for both L-CH and R-CH.
 - Switch position
 - DOLBY NR switch : OFF
 - DIR MODE switch : \leftrightarrow
 - Standard record position:
Deliver the standard input signal level to input jack and set the REC LEVEL control to obtain the standard output signal level as follows.

— Record Mode —



Standard Input Level

Input terminal	LINE IN
source impedance	10k Ω
input signal level	0.5V (- 3.8dB)

Standard Output Level

Output terminal	LINE OUT
load impedance	47k Ω
output signal level	0.5V (- 3.8dB)

Test Tape

Tape	Contents	Use
P-4-A100	10kHz, - 10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

$$0dB=0.775V$$

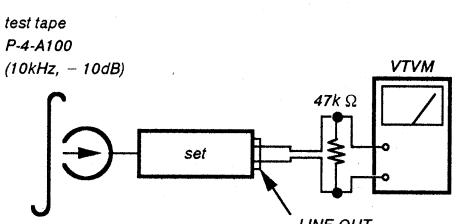
Test Mode

- Insert a short-circuit plug into TP801 (2P) and turn ON the power switch. (Earth pin ⑤ of IC801 and turn ON the power switch.)
The memory is turned ON when the recording starts, and the counter starts counting from "0000".
When applying +5V to pin ⑤ of IC801, the FL tube will be fully lit.
- To release the test mode, remove the short plug and turn off the power switch.
- Remove the short plug after completion of adjustment.

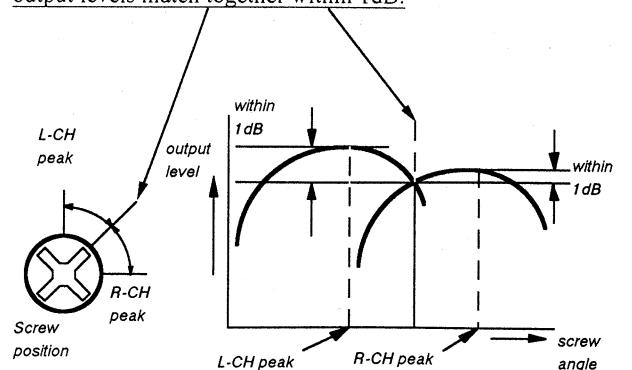
Record/Playback Head Azimuth Adjustment

Procedure :

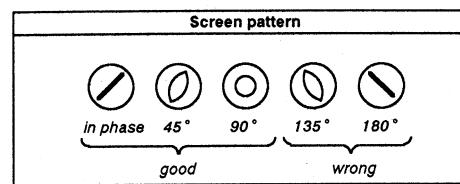
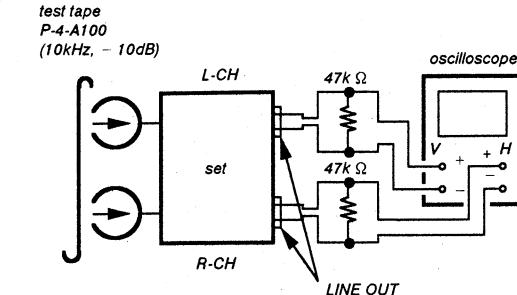
- Forward playback Mode



- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

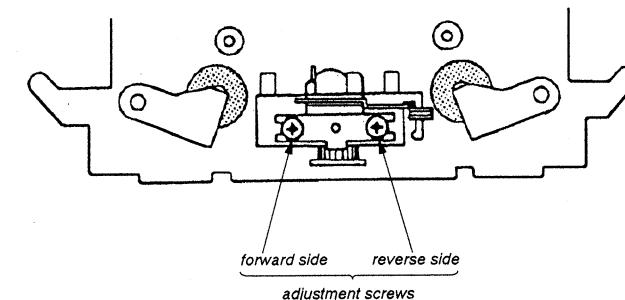


3. Playback Mode



- Change the reverse playback mode and repeat the steps 1 to 3.
- After the adjustment, lock the adjustment screws with suitable locking compound.

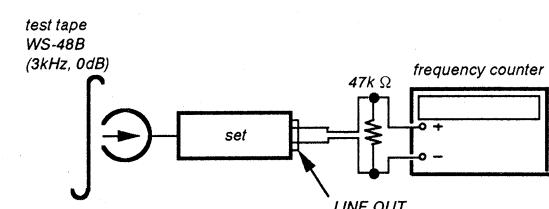
Adjustment Location : — record/playback head —



Tape Speed Adjustment

Procedure :

- Forward Playback Mode



- Set to FWD playback mode.
- Adjust RV71 so that the frequency counter reading becomes $3,000 \pm 10\text{Hz}$.

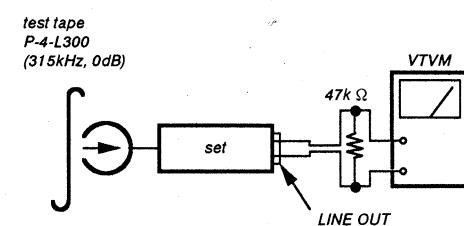
Frequency difference between the beginning and the end of the tape should be within 3%.

Adjustment Location : AUDIO board

Playback Level Adjustment

Procedure :

- Forward Playback Mode



Adjust RV11(L-CH) and RV21(R-CH) so the VTVM reading becomes the adjustment limits below.

Adjustment Value :

$$\text{LINE OUT level} : - 7.7 \pm 0.5\text{dB} (0.301 \text{ to } 0.338\text{V})$$

Level difference between channels : within 0.5dB

Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times

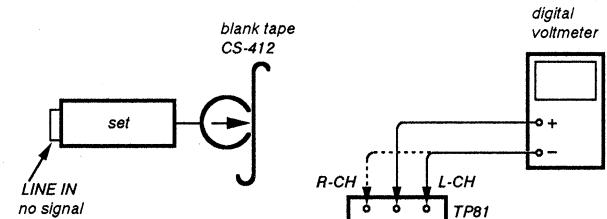
Adjustment Location : AUDIO board

Bias Consumption Current Adjustment

This adjustment should be performed when replacing the head assy or the bias oscillating transformer (T81, T91).

Procedure :

() : R-CH



- Connect the digital voltmeter to test point TP81.

- Set RV81 (RV91) to mechanical center.

- Set to FWD record mode.

- Adjust T81 (T91) so that the digital voltmeter reading becomes minimum.

Adjustment Location : AUDIO board

SECTION 6 DIAGRAMS

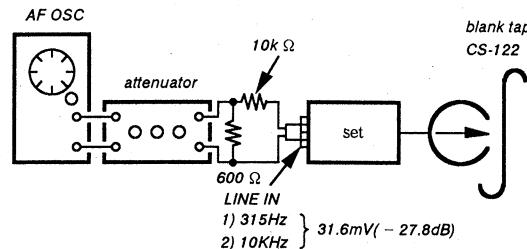
Record Bias Adjustment

Setting :

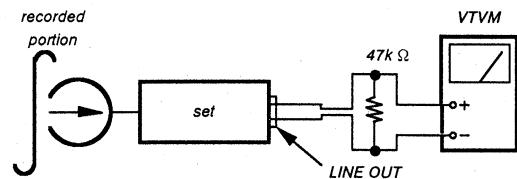
REC LEVEL control : standard record position (Refer to page 11.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV81(L-CH), RV91(R-CH) and repeat the steps given above.

Adjustment Location : AUDIO board

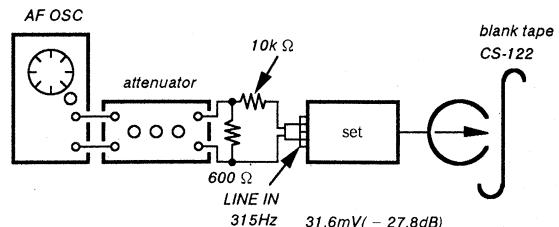
Record Level Adjustment

Setting :

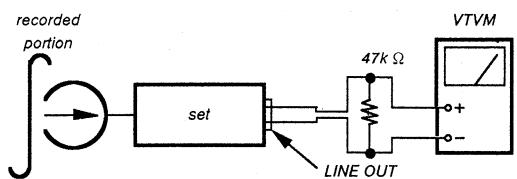
REC LEVEL control : standard record position (Refer to page 11.)

Procedure :

1. Record Mode



2. Playback Mode



Confirm playback the tape recorded become adjustment level as follows.

If necessary, adjust RV121(L-CH), RV221(R-CH) and repeat the steps 1 and 2.

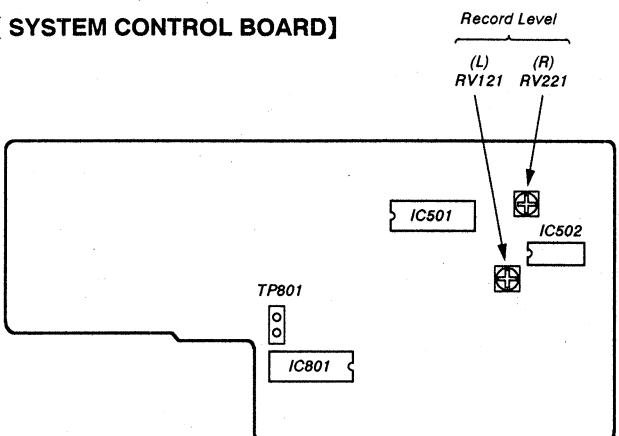
Adjustment Value :

LINE OUT level : $-26 \pm 0.5\text{dB}$ (36.7 to 41.1mV)

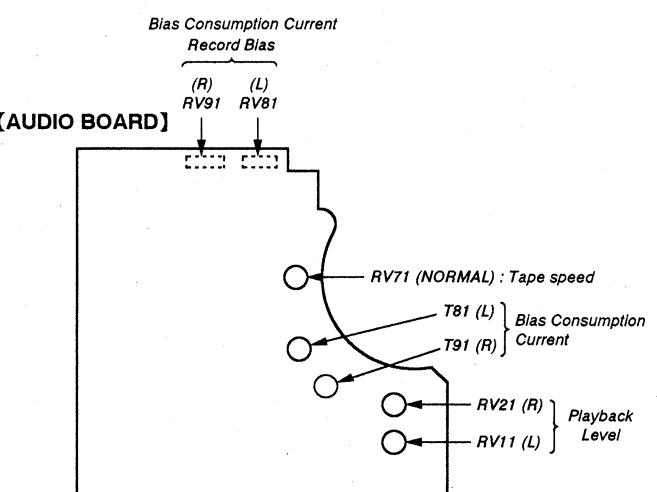
Adjustment Location : SYSTEM CONTROL

— Adjustment Parts Location Diagrams —

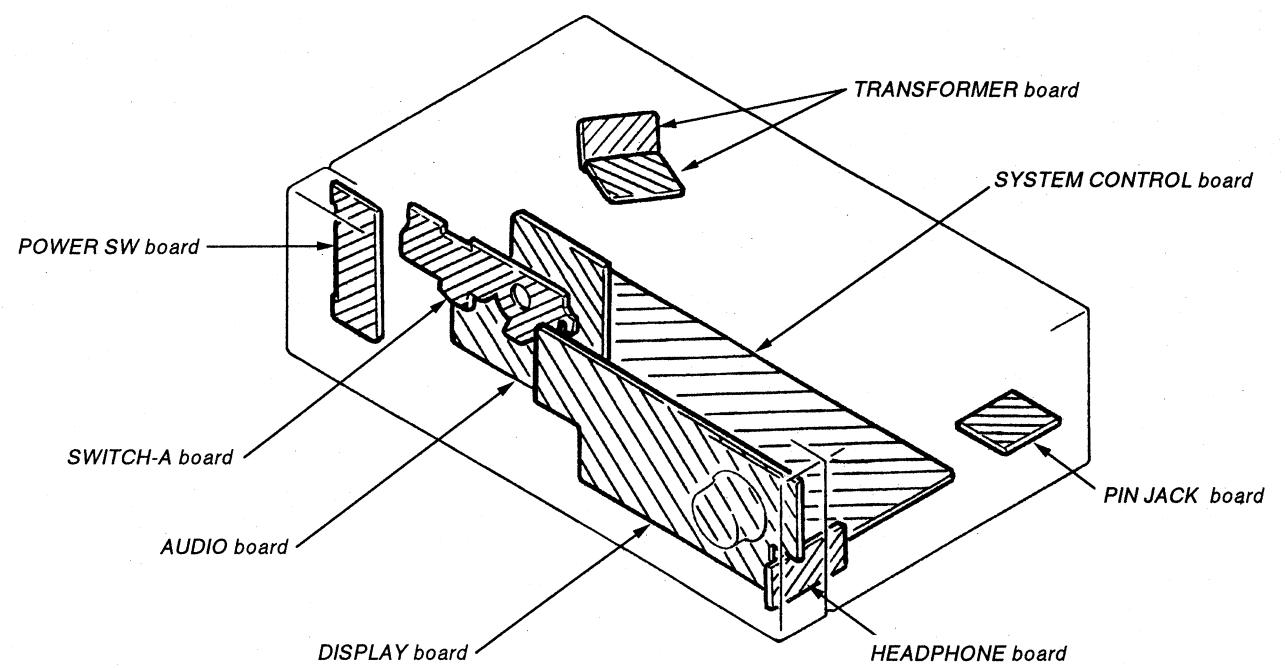
[SYSTEM CONTROL BOARD]



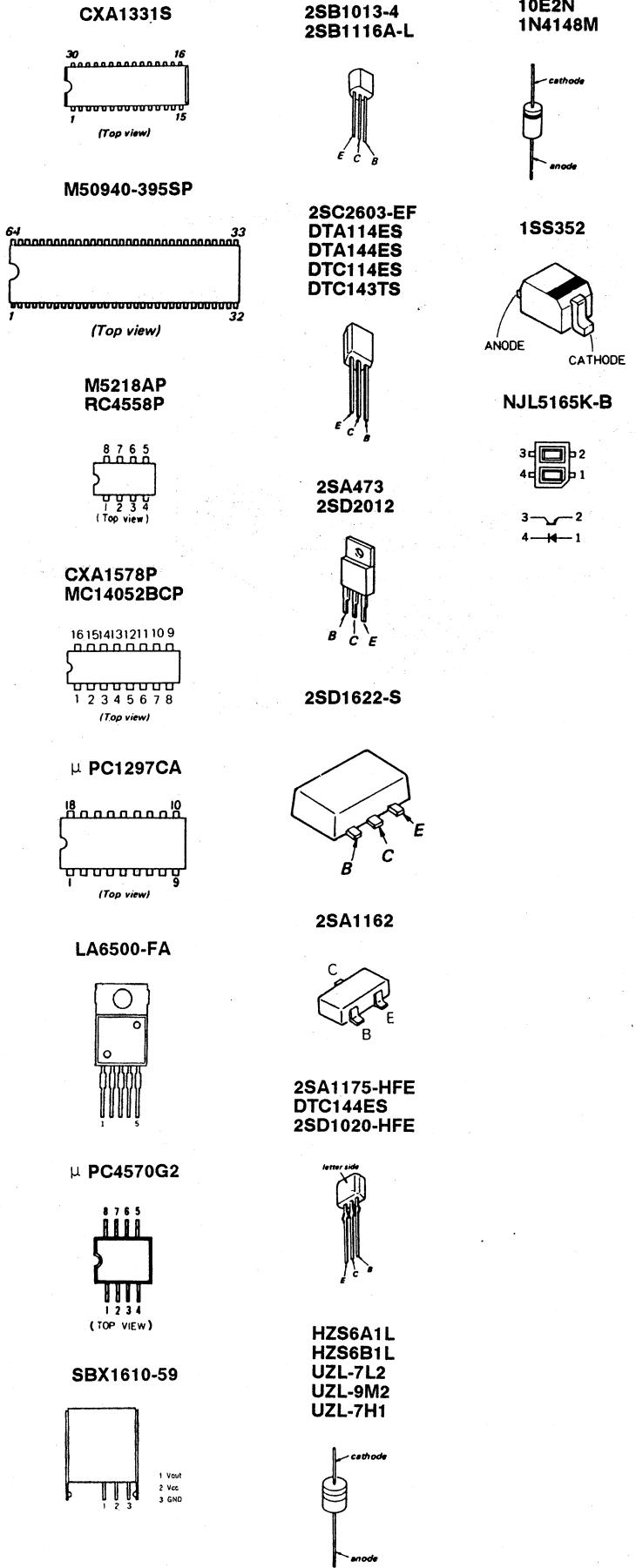
[AUDIO BOARD]



6-1. CIRCUIT BOARDS LOCATION



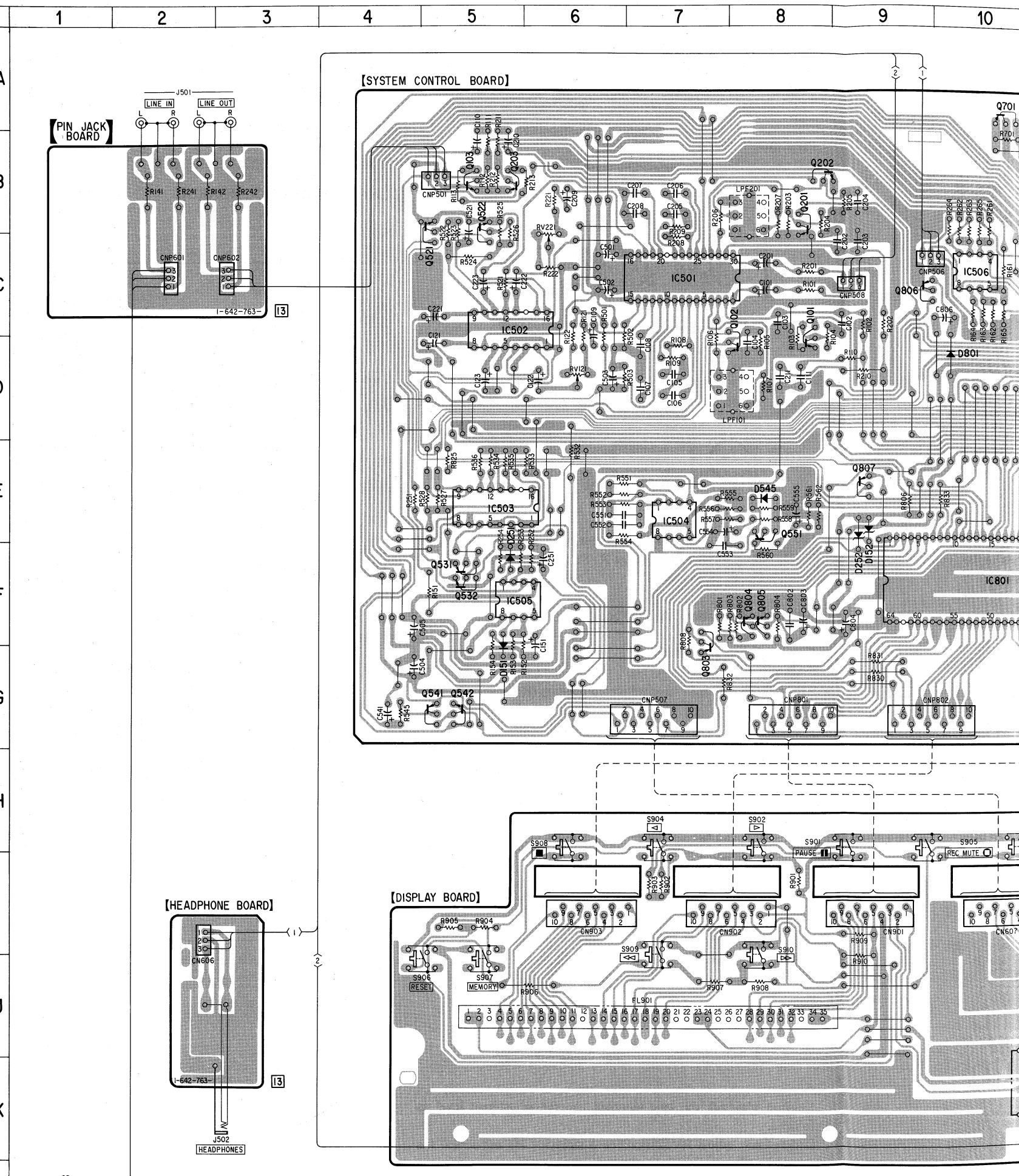
• Semiconductor Lead Layouts.



• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D31	H - 17	Q51	G - 18
D151	G - 5	Q52	G - 18
D152	E - 9	Q53	H - 18
D251	F - 5	Q71	H - 20
D252	E - 9	Q101	D - 8
D545	E - 8	Q102	D - 8
D701	B - 15	Q103	B - 5
D702	B - 15	Q201	B - 8
D703	B - 15	Q202	B - 8
D704	B - 15	Q203	B - 5
D705	B - 15	Q521	B - 5
D706	C - 15	Q522	B - 5
D707	B - 14	Q531	F - 5
D708	B - 13	Q532	F - 5
D709	C - 14	Q541	G - 5
D710	C - 16	Q542	G - 5
D711	B - 15	Q551	E - 8
D712	C - 13	Q701	A - 10
D713	C - 16	Q702	A - 11
D714	C - 14	Q703	B - 14
D715	B - 13	Q704	C - 13
D801	D - 10	Q705	A - 12
D802	E - 11	Q706	C - 14
D803	E - 11	Q707	B - 15
IC31	I - 18	Q802	C - 11
IC81	H - 19 (AUDIO)	Q803	F - 7
IC81	H - 24 (SW-A)	Q804	F - 8
IC501	C - 7	Q805	F - 8
IC502	C - 5	Q806	C - 9
IC503	E - 5	Q807	E - 9
IC504	E - 7	Q808	D - 16
IC505	F - 5	Q809	D - 16
IC506	C - 10	Q810	E - 16
IC701	B - 13		
IC801	F - 10		
IC802	D - 14		
IC901	K - 11		

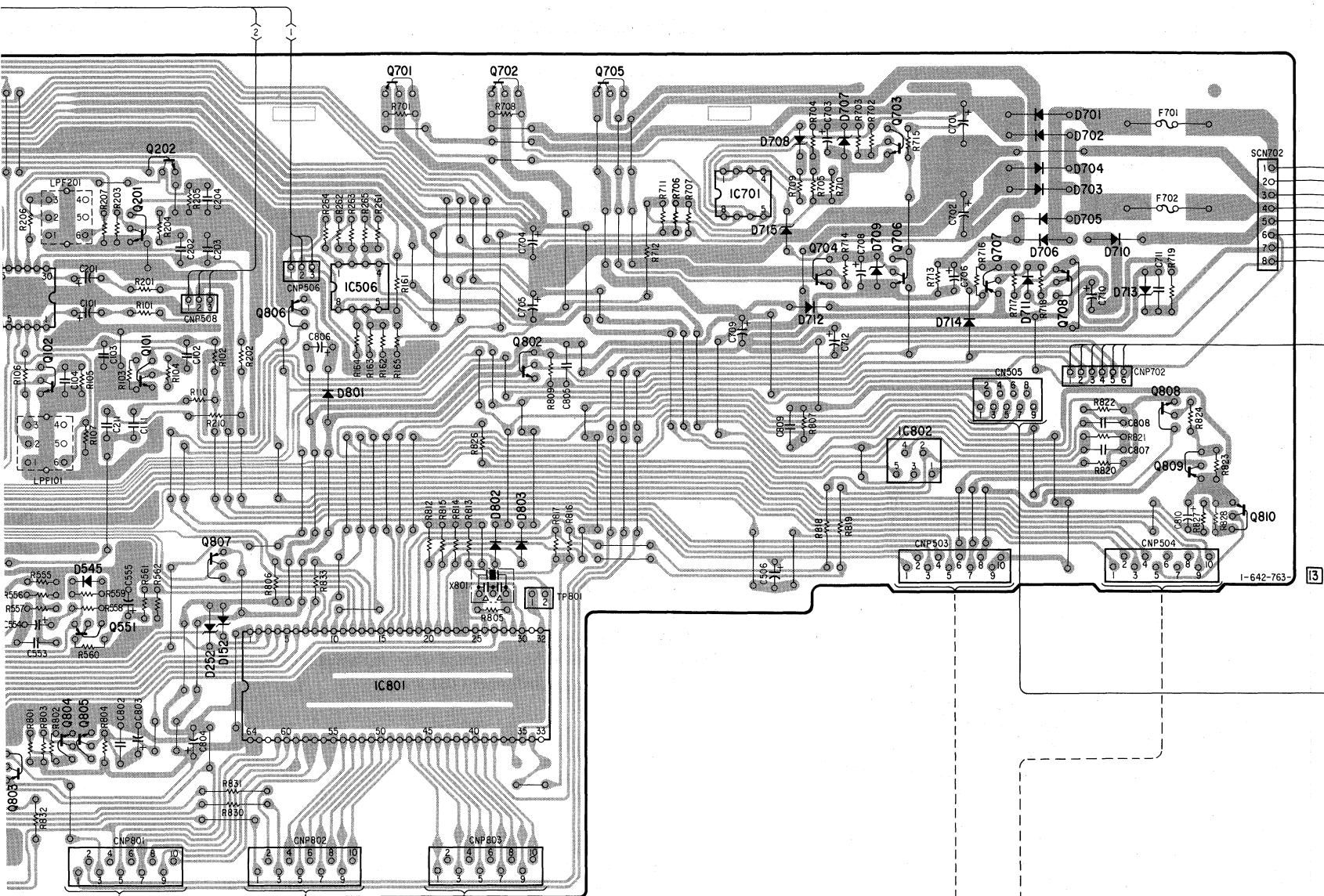
6-2. PRINTED WIRING BOARDS



Note:

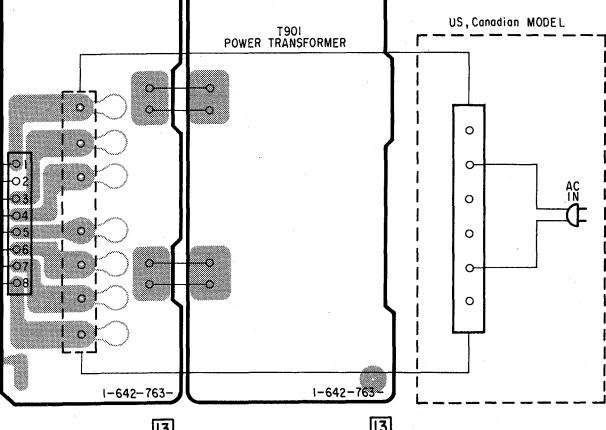
- : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ■■■ : Pattern on the side which is seen.
- ■■■ : Pattern of the rear side.
- □ : Chip components extracted from the rear side.

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

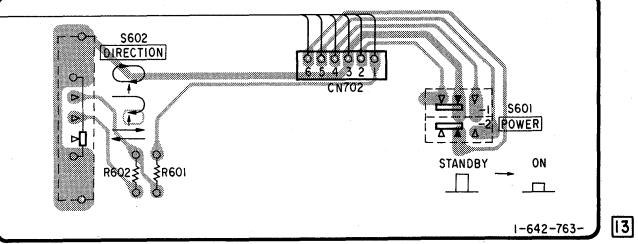


TRANSFORMER BOARD(1/2)

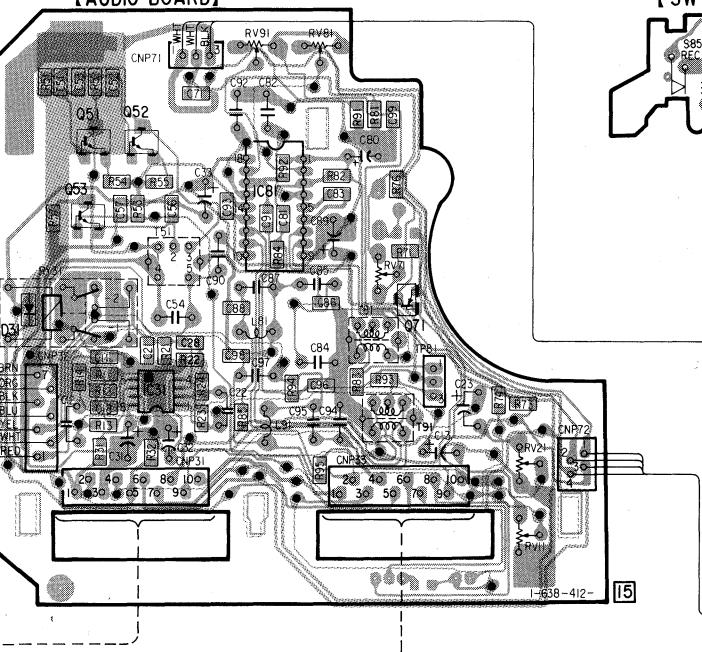
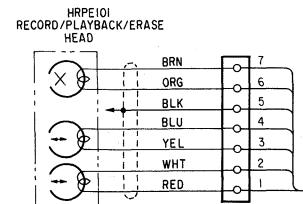
TRANSFORMER BOARD(2/2)



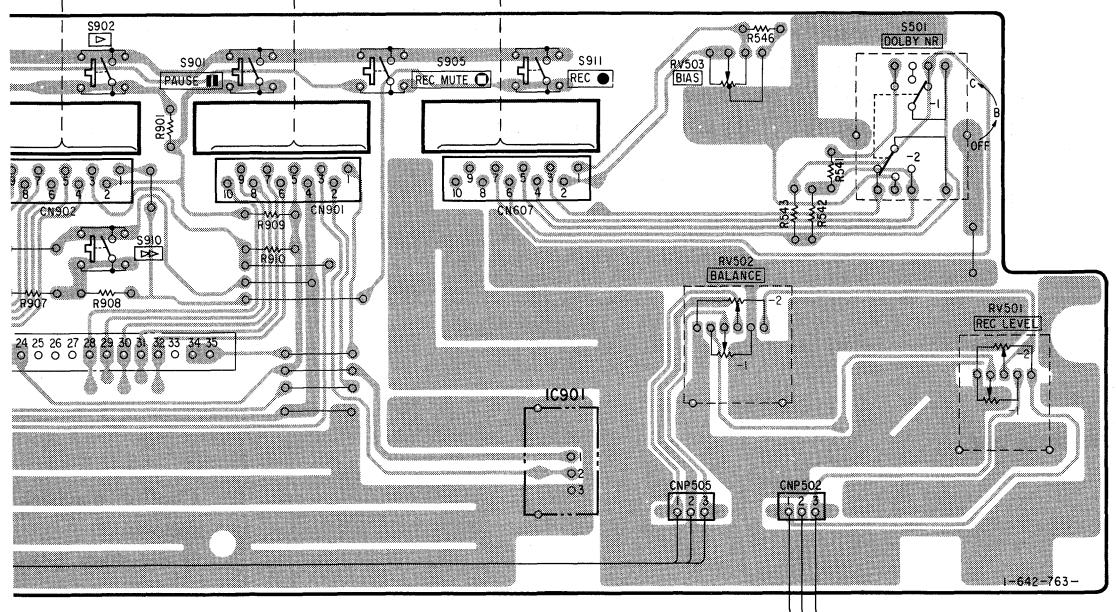
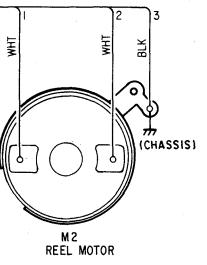
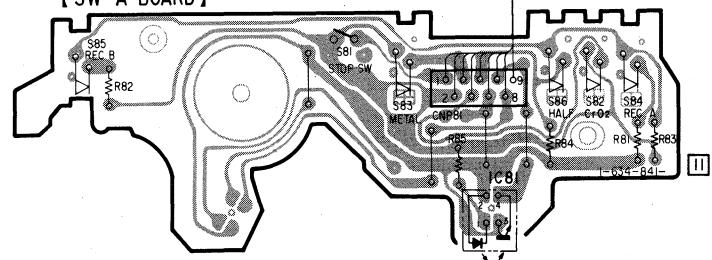
POWER SW BOARD

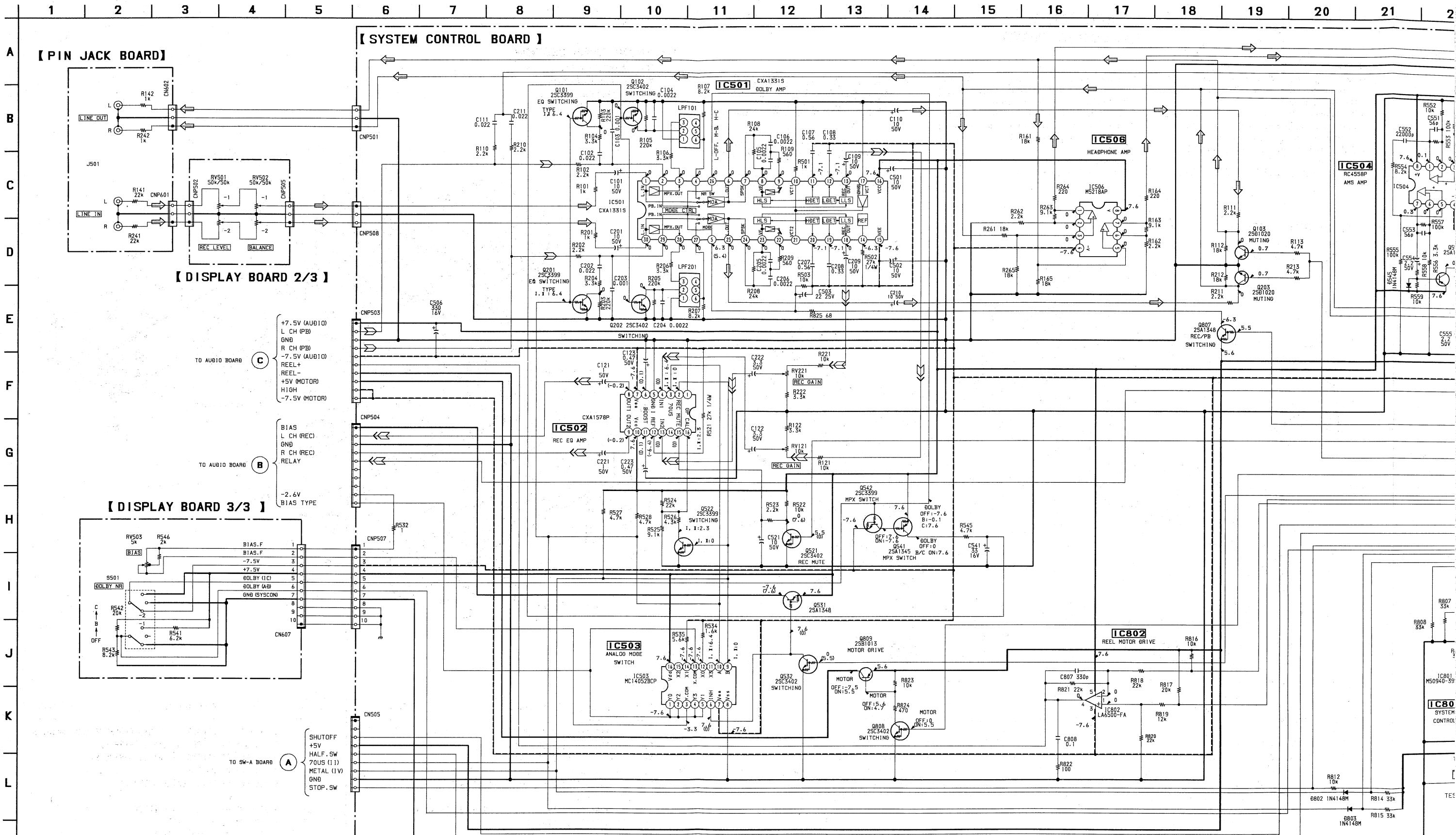


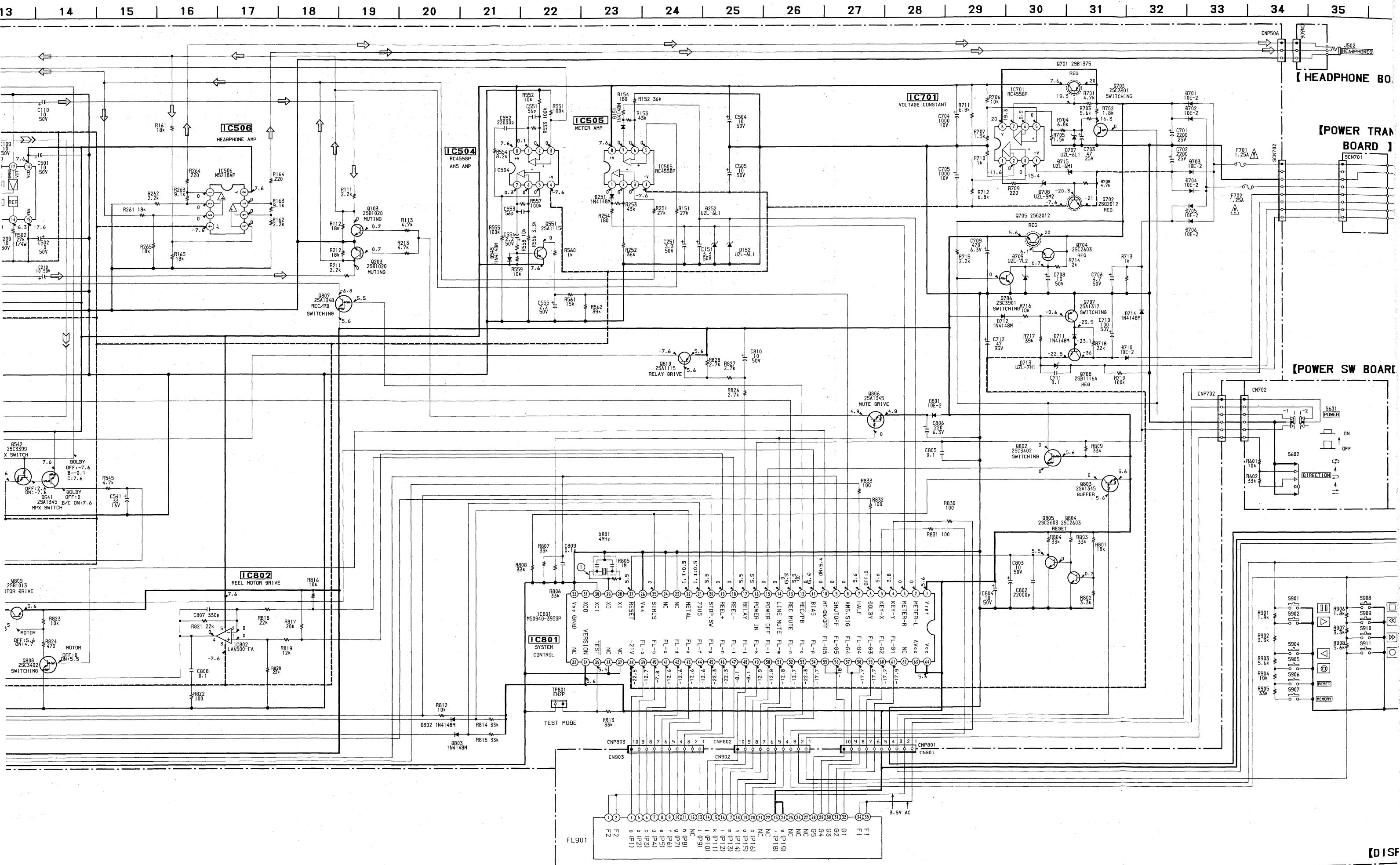
AUDIO BOARD



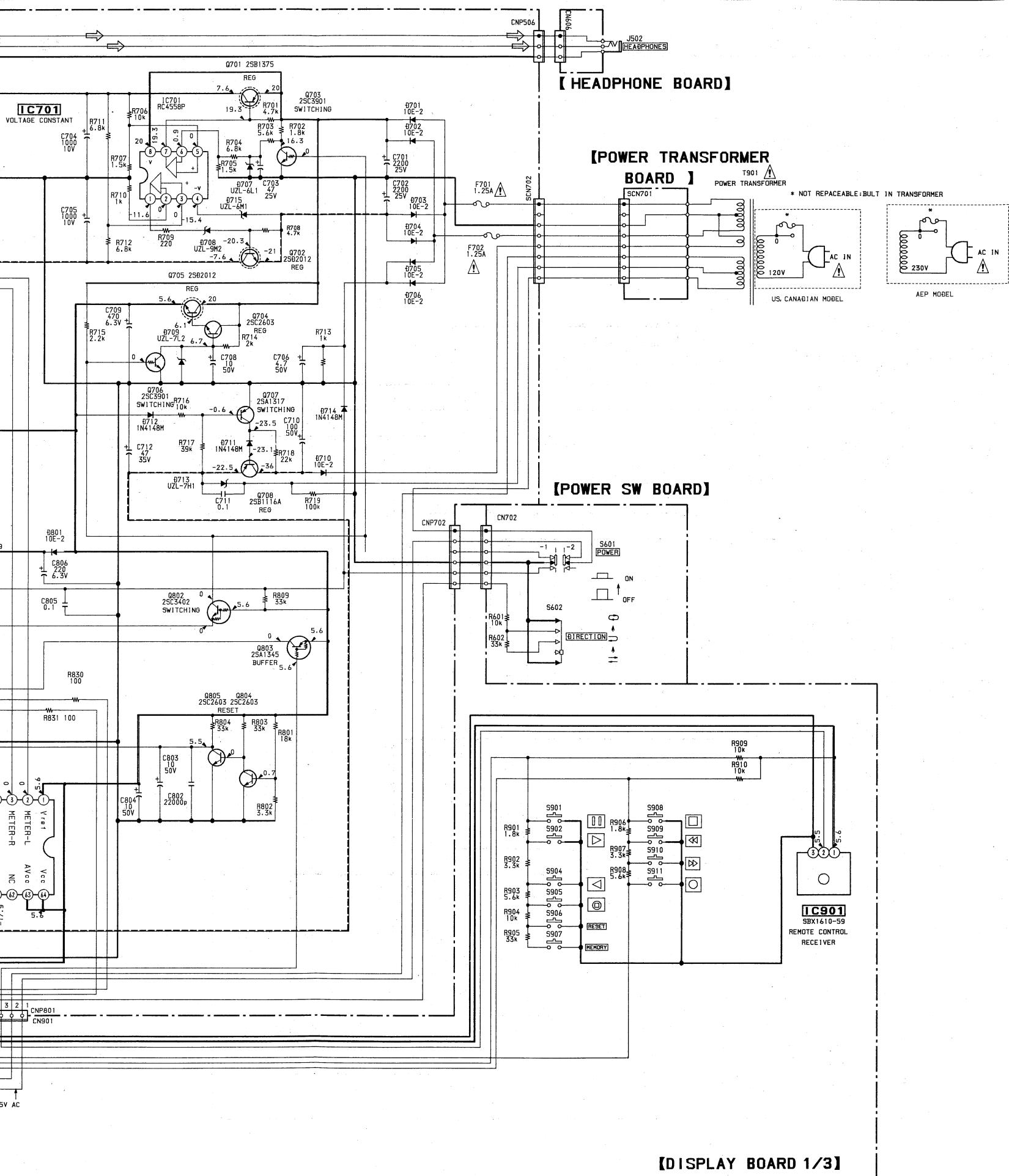
SW-A BOARD







28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40

**Note :**

- All capacitors are in μF unless otherwise noted. pF: $\mu \mu F$
- 50W or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.

Note :

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

D

- : B+ Line
- - - : B- Line
- : adjustment for repair.

- * : selected to yield optimum performance.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.

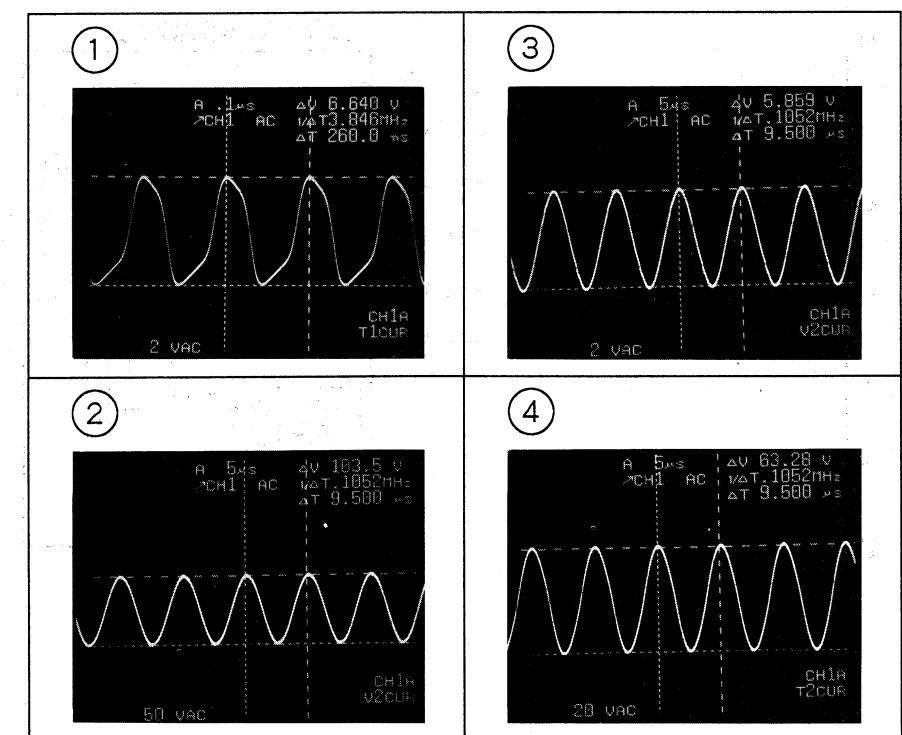
no mark : STOP

() : REC

- Voltages are taken with a VOM (Input impedance $10M \Omega$). Voltage variations may be noted due to normal production tolerances.

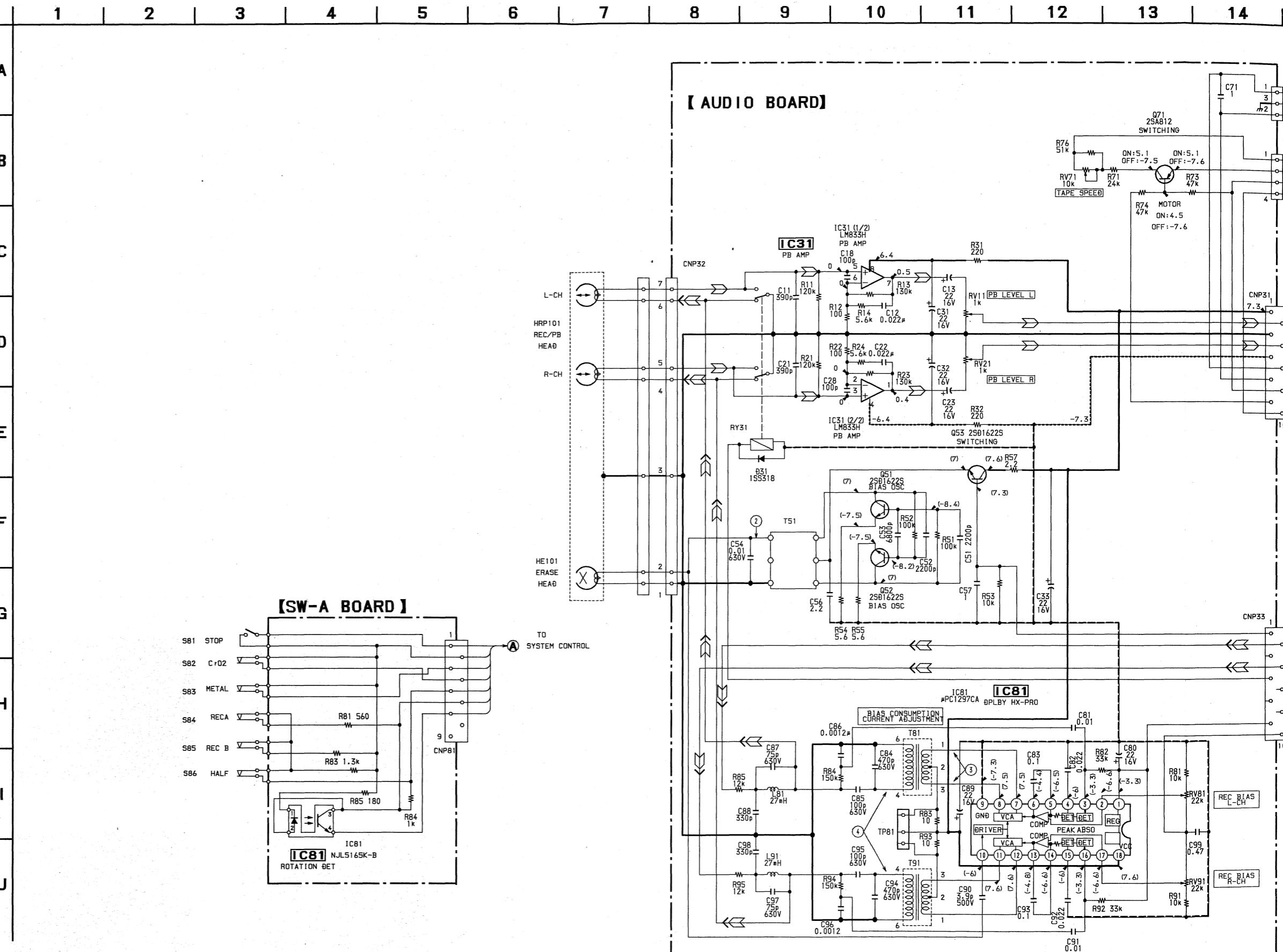
F

- Signal path.
- : PB
- : REC

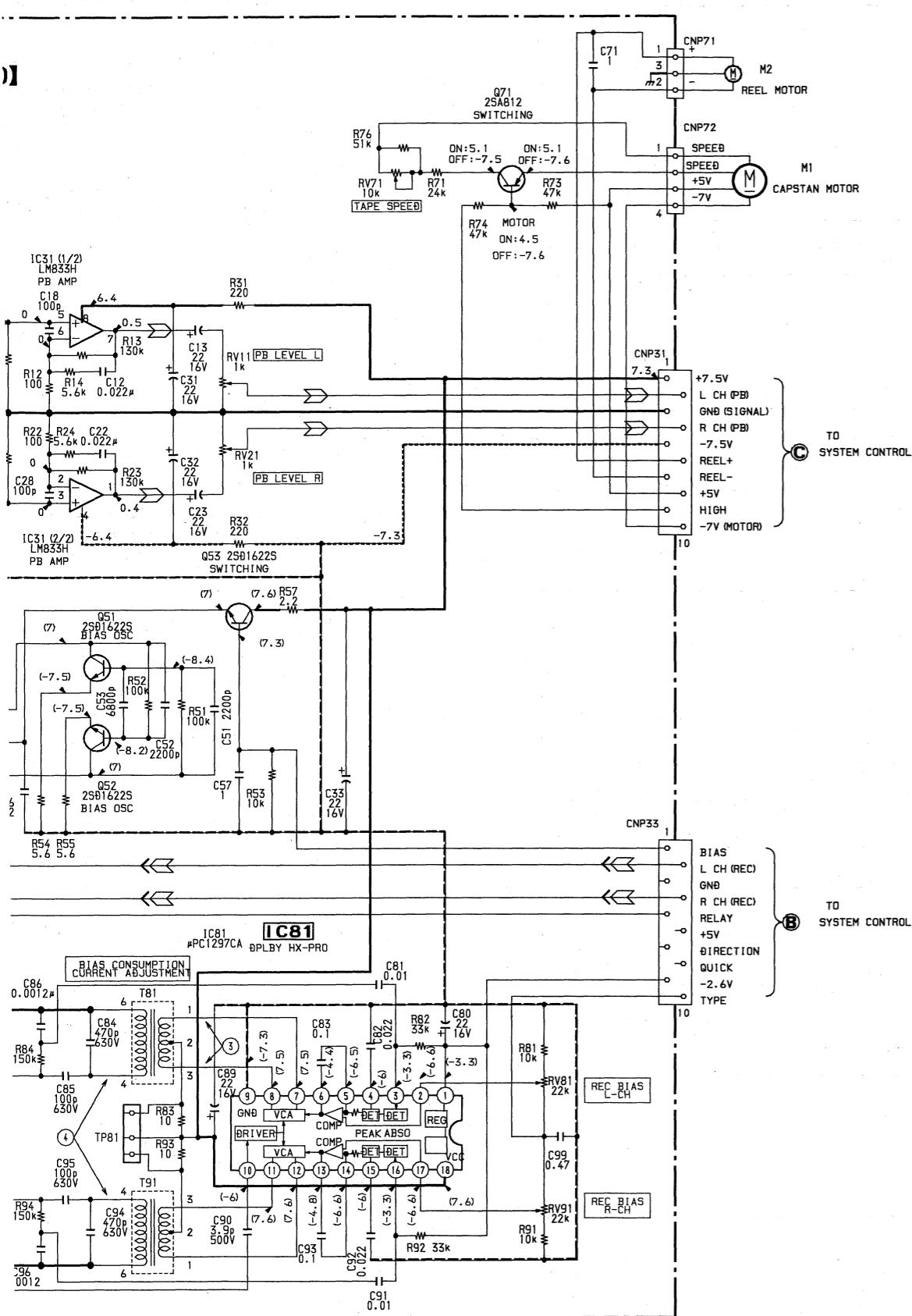
WAVEFORMS

6-4. SCHEMATIC DIAGRAM (AUDIO SECTION)

• Refer to page 23 for note.

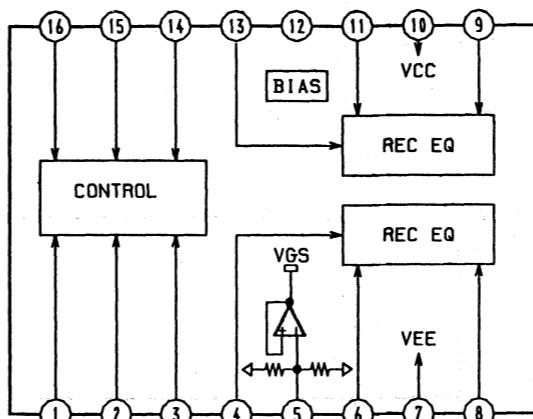


10 | 11 | 12 | 13 | 14 | 15 | 16 | 17



• IC BLOCK DIAGRAM

CXA1378P



A vertical column of letters A through J is positioned to the left of the IC block diagram, likely indicating specific connection points or sections of the IC.

SECTION 7 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example:
KNOB, BALANCE (WHITE) (RED)

Parts color Cabinet's color

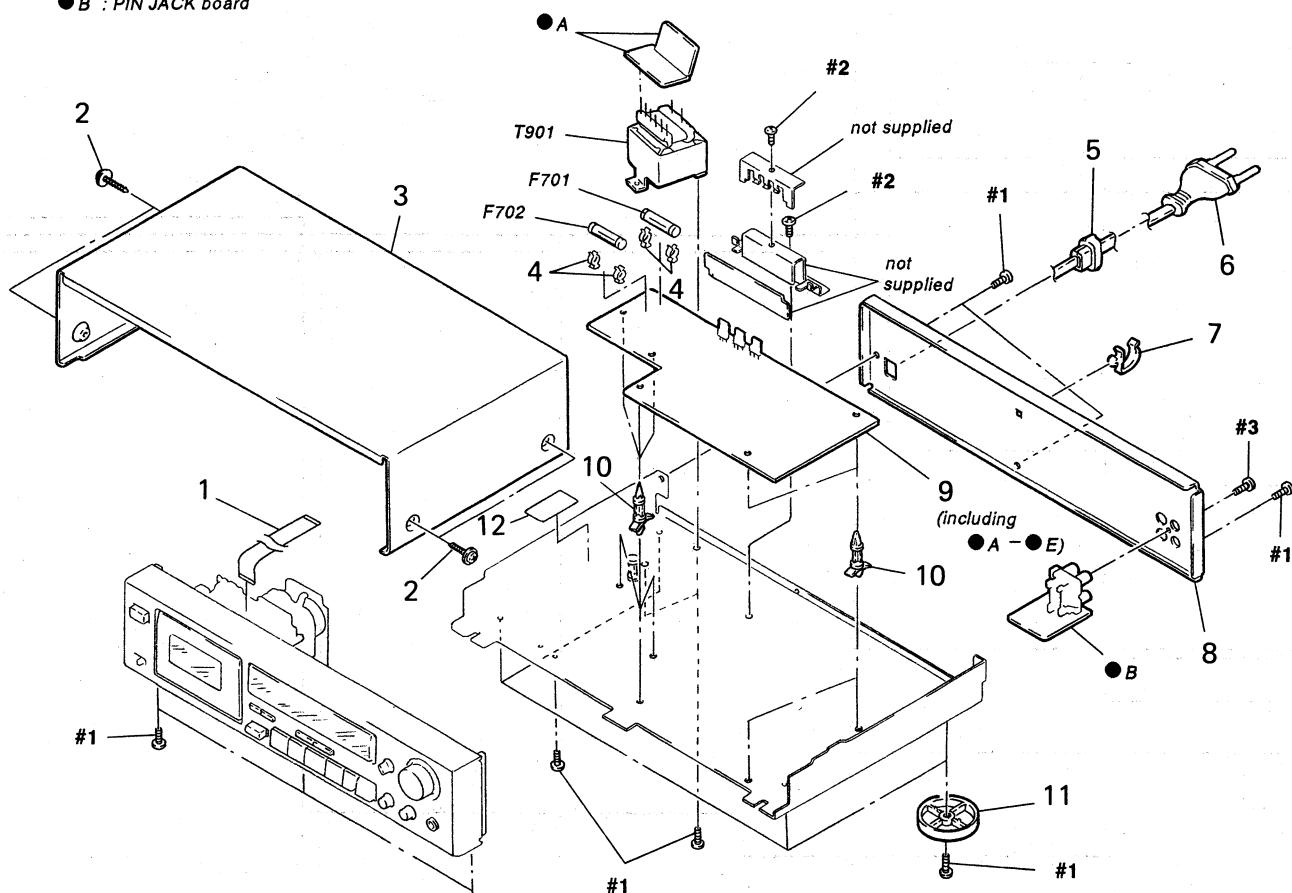
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

7-1. CHASSIS SECTION

- A : TRANSFORMER board
- B : PIN JACK board

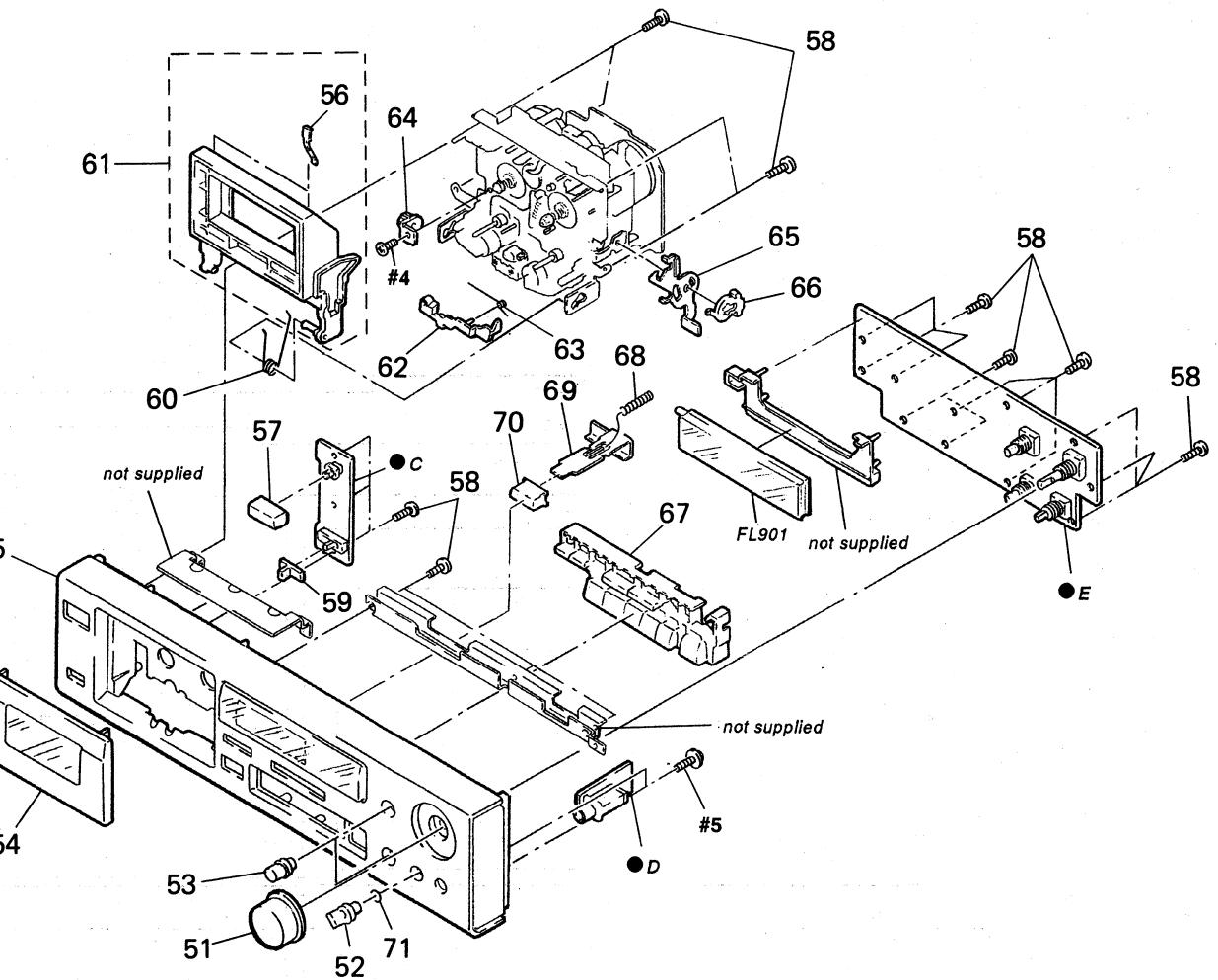


Ref. No.	Part No.	Description	Remark
1	1-575-781-11	WIRE, FLAT TYPE (9 CORE)	
2	3-704-366-01	SCREW (CASE) (M3X8)	
3	3-332-578-42	CASE	
* 4	1-533-213-31	HOLDER, FUSE	
* 5	3-703-244-00	BUSHING (2104), CORD (AEP)	
* 5	3-703-571-11	BUSHING (S) (4516), CORD (US, Canadian)	
Δ 6	1-555-795-00	CORD, POWER, EUO PLUG (AEP)	
Δ 6	1-558-945-11	CORD, POWER (POLAR.SPT-1)(US, Canadian)	
* 7	4-949-235-01	HOOK	
* 8	3-377-944-01	PANEL, BACK (US, Canadian)	
* 8	3-377-944-11	PANEL, BACK (AE1)	
* 8	3-377-944-21	PANEL, BACK (AE2)	

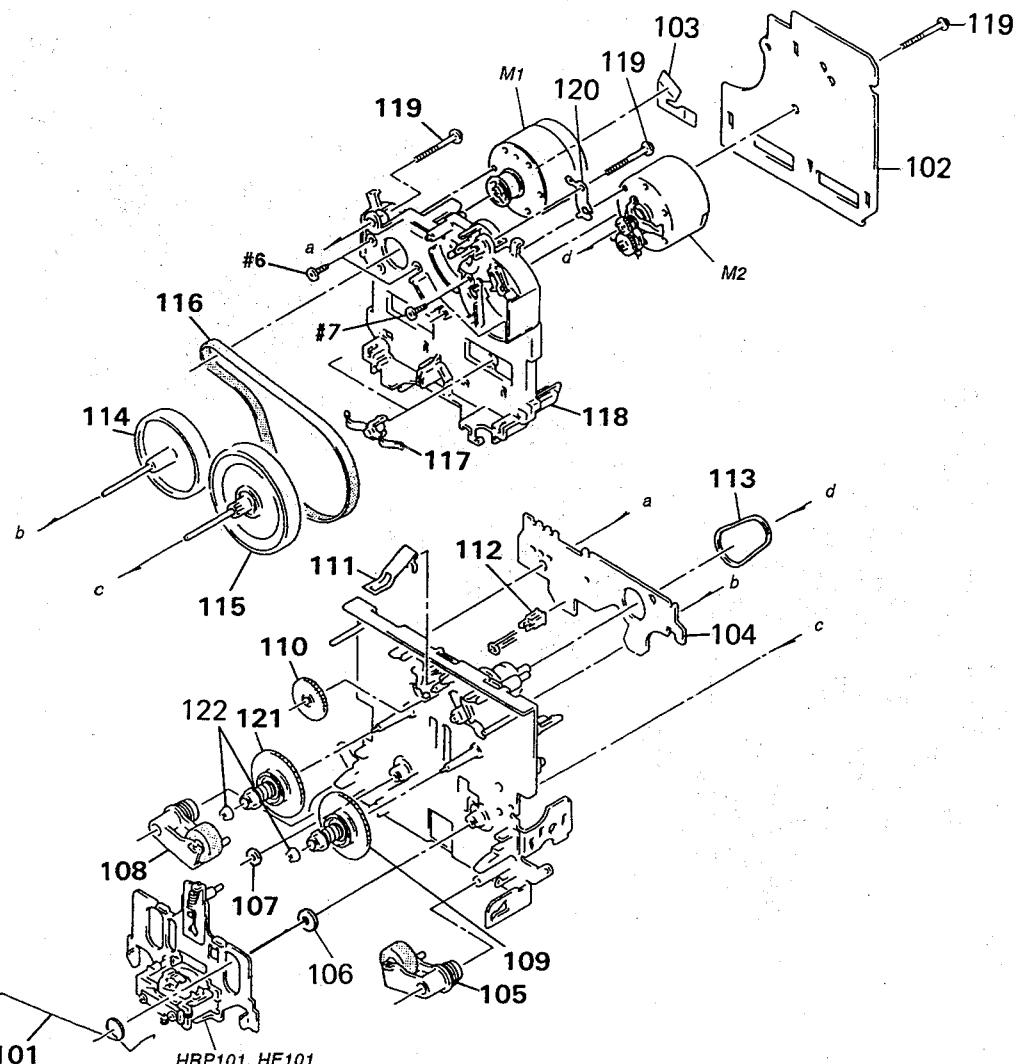
Ref. No.	Part No.	Description	Remark
* 9	A-2006-786-A	SYSTEM CONTROL BOARD, COMPLETE	
* 10	3-346-265-11	HOLDER, PC BOARD	
11	4-943-148-32	FOOT (F58175SW) (US, Canadian)	
11	4-943-148-42	FOOT (F58175SW) (AEP)	
* 12	3-703-044-26	LABEL, CAUTION (US, Canadian)	
Δ F701	1-532-285-00	FUSE, TIME-LAG (AEP)	
Δ F701	1-532-741-11	FUSE, GLASS TUBE (US, Canadian)	
Δ F702	1-532-285-00	FUSE, TIME-LAG (AEP)	
Δ F702	1-532-741-11	FUSE, GLASS TUBE (US, Canadian)	
Δ T901	1-450-750-11	TRANSFORMER, POWER (AEP)	
Δ T901	1-450-751-11	TRANSFORMER, POWER (US, Canadian)	

7-2. FRONT PANEL SECTION

- C : POWER SW board
- D : HEADPHONE board
- E : DISPLAY board



7-3. MECHANISM SECTION 1
(TCM-190RB12CJ)

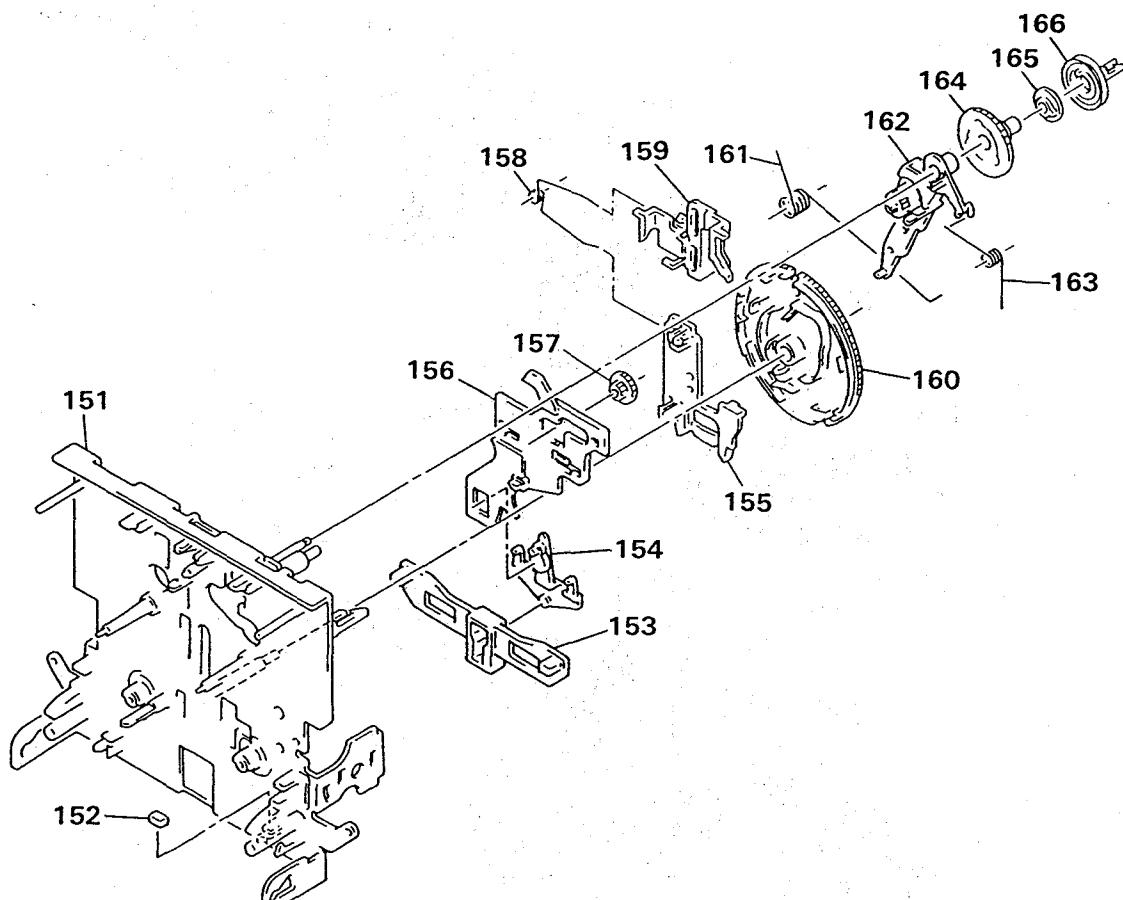


Ref. No.	Part No.	Description	Remark
101	3-359-455-01	SPRING, TORSION	
* 102	A-2006-828-A	AUDIO BOARD, COMPLETE	
103	1-638-983-11	PC BOARD, MOTOR FLEXIBLE	
* 104	1-634-841-14	SW-A BOARD	
105	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY	
106	3-356-713-01	WASHER	
107	3-356-714-01	WASHER	
108	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY	
109	X-3359-404-1	TABLE ASSY, REEL	
110	3-359-424-01	GEAR (REV GEAR)	
111	3-359-430-01	SPRING(CASSETTE RETAINER), LEAF	

Ref. No.	Part No.	Description	Remark
112	3-343-419-01	HOLDER (S SENSER A)	
113	3-359-486-01	BELT (FR), SQUARE	
114	X-3359-410-1	FLYWHEEL (REV) ASSY	
115	X-3364-554-1	FLYWHEEL (FWD) ASSY	
116	3-359-417-01	BELT (FLAT), CAPSTAN	
117	3-575-321-00	RETAINER, THRUST, CAPSTAN	
* 118	3-359-436-01	BASE (THRUST RETAINER), FITTING	
119	3-359-414-01	SCREW (+PTPWH 2X23)	
120	3-359-450-01	PLATE, GROUND	
121	X-3362-078-1	TABLE ASSY (B), REEL	
122	3-362-308-01	CAP (REEL)	

HE101 A-2003-838-A BASE ASSY, HEAD (ERASE)
 HRP101 A-2003-838-A BASE ASSY, HEAD (PB/REC)
 M1 X-3359-417-1 MOTOR ASSY, CAPSTAN
 M2 X-3363-501-1 MOTOR ASSY, REEL

7-4. MECHANISM SECTION 2
(TCM-190RB12CJ)



Ref. No.	Part No.	Description	Remark
151	X-3359-415-1	CHASSIS ASSY, MECHANICAL	
152	3-359-469-01	SPACER	
* 153	3-359-425-01	SLIDER (REVERSE SLIDER)	
154	3-359-426-01	LEVER (REVERSE LEVER)	
* 155	3-359-427-01	SLIDER (LEVERSE SLIDER)	
* 156	3-359-415-01	SLIDER (TRIGGER SLIDER)	
157	3-359-448-01	GEAR (TRIGGER)	
158	3-359-454-01	SPRING, TORSION	
159	3-359-429-01	SLIDER (BRAKE PLATE)	

Ref. No.	Part No.	Description	Remark
160	3-359-420-01	GEAR (CAM GEAR)	
161	3-359-456-01	SPRING(TRIGGER SPRING), TORSION	
162	X-3359-405-1	LEVER (FR ARM) ASSY	
163	3-359-453-01	SPRING (FR ARM), TORSION	
164	3-359-419-01	GEAR (FR GEAR)	
165	3-359-421-01	CLUTCH (REEL DISK)	
166	3-359-418-01	PULLEY (FR PULLEY)	

SECTION 8

ELECTRICAL PARTS LIST

AUDIO

NOTE:

● Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

● -XX, -X mean standardized parts, so they may have some difference from the original one.

● **RESISTORS**

All resistors are in ohms

METAL: Metal-film resistor

METAL OXIDE: Metal oxide-film resistor

F: nonflammable

● Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

● **SEMICONDUCTORS**

In each case, u:μ, for example:

uA....:μA...., uPA....:μPA....

uPB....:μPB...., uPC....:μPC....

uPD....:μPD....

● **CAPACITORS**

uF:μF

● **COILS**

uH:μH

<p>The components identified by mark ▲ or dotted line with mark △ are critical for safety. Replace only with part number specified.</p>

<p>Les composants identifiés par une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>

<p>When indicating parts by reference number, please include the board.</p>

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark				
*	A-2006-828-A	AUDIO BOARD, COMPLETE		C92	1-136-157-00	FILM	0.022uF 5% 50V				

		< CAPACITOR >		C93	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V				
C11	1-163-131-00	CERAMIC CHIP	390PF 5% 50V	C94	1-136-478-11	FILM	470PF 5% 630V				
C12	1-136-157-00	FILM	0.022uF 5% 50V	C95	1-136-433-11	FILM	100PF 5% 630V				
C13	1-124-234-00	ELECT	22uF 20% 16V	C96	1-163-143-00	CERAMIC CHIP	0.0012uF 5% 50V				
C18	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	C97	1-136-273-91	FILM	75PF 5% 630V				
C21	1-163-131-00	CERAMIC CHIP	390PF 5% 50V	C98	1-163-003-11	CERAMIC CHIP	330PF 10% 50V				
C22	1-136-157-00	FILM	0.022uF 5% 50V	C99	1-164-005-11	CERAMIC CHIP	0.47uF 25V				
C23	1-124-234-00	ELECT	22uF 20% 16V	< CONNECTOR >							
C28	1-163-117-00	CERAMIC CHIP	100PF 5% 50V	* CNP31	1-580-782-11	CONNECTOR, BOARD TO BOARD					
C31	1-124-234-00	ELECT	22uF 20% 16V	* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P					
C32	1-124-234-00	ELECT	22uF 20% 16V	* CNP33	1-580-782-11	CONNECTOR, BOARD TO BOARD					
C33	1-124-234-00	ELECT	22uF 20% 16V	* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P					
C51	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V	* CNP72	1-580-411-11	SOCKET, CONNECTOR 4P					
C52	1-164-161-11	CERAMIC CHIP	0.0022uF 10% 100V	* CNP75 1-564-718-11 PIN, CONNECTOR (SMALL TYPE) 2P							
C53	1-163-019-00	CERAMIC CHIP	0.0068uF 10% 50V	< DIODE >							
C54	1-136-601-11	FILM	0.01uF 5% 630V	D31	8-719-016-74	DIODE	ISS352				
C56	1-164-505-11	CERAMIC CHIP	2.2uF 16V	< IC >							
C57	1-164-346-11	CERAMIC CHIP	1uF 16V	IC31	8-759-106-02	IC	uPC4570G2				
C71	1-164-346-11	CERAMIC CHIP	1uF 16V	IC81	8-759-106-56	IC	uPC1297CA				
C80	1-124-234-00	ELECT	22uF 20% 16V	< COIL >							
C81	1-164-232-11	CERAMIC CHIP	0.01uF 50V	L81	1-410-780-11	INDUCTOR	27mH				
C82	1-136-157-00	FILM	0.022uF 5% 50V	L91	1-410-780-11	INDUCTOR	27mH				
C83	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	< TRANSISTOR >							
C84	1-136-478-11	FILM	470PF 5% 630V	Q51	8-729-808-01	TRANSISTOR	2SD1622-S				
C85	1-136-433-11	FILM	100PF 5% 630V	Q52	8-729-808-01	TRANSISTOR	2SD1622-S				
C86	1-163-143-00	CERAMIC CHIP	0.0012uF 5% 50V	Q53	8-729-808-01	TRANSISTOR	2SD1622-S				
C87	1-136-273-91	FILM	75PF 5% 630V	Q71	8-729-216-22	TRANSISTOR	2SA1162				
C88	1-163-003-11	CERAMIC CHIP	330PF 10% 50V								
C89	1-124-234-00	ELECT	22uF 20% 16V								
C90	1-107-045-00	MICA	3.9PF 500V								
C91	1-164-232-11	CERAMIC CHIP	0.01uF 50V								

AUDIO**SW-A****SYSTEM CONTROL**

Ref. No.	Part No.	Description	Remark
< RESISTOR >			

R11 1-216-099-00 METAL CHIP 120K 5% 1/10W
 R12 1-216-025-00 METAL CHIP 100 5% 1/10W
 R13 1-216-100-00 METAL GLAZE 130K 5% 1/10W
 R14 1-216-067-00 METAL CHIP 5.6K 5% 1/10W
 R21 1-216-099-00 METAL CHIP 120K 5% 1/10W

R22 1-216-025-00 METAL CHIP 100 5% 1/10W
 R23 1-216-100-00 METAL GLAZE 130K 5% 1/10W
 R24 1-216-067-00 METAL CHIP 5.6K 5% 1/10W
 R31 1-216-033-00 METAL CHIP 220 5% 1/10W
 R32 1-216-033-00 METAL CHIP 220 5% 1/10W

R51 1-216-097-00 METAL CHIP 100K 5% 1/10W
 R52 1-216-097-00 METAL CHIP 100K 5% 1/10W
 R53 1-216-073-00 METAL CHIP 10K 5% 1/10W
 R54 1-216-309-00 METAL CHIP 5.6 5% 1/10W
 R55 1-216-309-00 METAL CHIP 5.6 5% 1/10W

R57 1-216-298-00 METAL CHIP 2.2 5% 1/10W
 R71 1-216-082-00 METAL GLAZE 24K 5% 1/10W
 R72 1-216-081-00 METAL CHIP 22K 5% 1/10W
 R73 1-216-089-00 METAL CHIP 47K 5% 1/10W
 R74 1-216-089-00 METAL CHIP 47K 5% 1/10W

R76 1-216-090-00 METAL CHIP 51K 5% 1/10W
 R81 1-216-073-00 METAL CHIP 10K 5% 1/10W
 R82 1-216-085-00 METAL CHIP 33K 5% 1/10W
 R83 1-216-001-00 METAL CHIP 10 5% 1/10W
 R84 1-216-101-00 METAL CHIP 150K 5% 1/10W

R85 1-216-075-00 METAL CHIP 12K 5% 1/10W
 R91 1-216-073-00 METAL CHIP 10K 5% 1/10W
 R92 1-216-085-00 METAL CHIP 33K 5% 1/10W
 R93 1-216-001-00 METAL CHIP 10 5% 1/10W
 R94 1-216-101-00 METAL CHIP 150K 5% 1/10W

R95 1-216-075-00 METAL CHIP 12K 5% 1/10W

< VARIABLE RESISTOR >

RV11 1-241-627-11 RES, ADJ, CARBON 1K (PB LEVEL)
 RV21 1-241-627-11 RES, ADJ, CARBON 1K (PB LEVEL)
 RV71 1-241-630-11 RES, ADJ, CARBON 10K (TAPE SPEED)
 RV72 1-241-630-11 RES, ADJ, CARBON 10K (TAPE SPEED)
 RV81 1-241-122-11 RES, ADJ, CARBON 22K (REC BIAS)

RV91 1-241-122-11 RES, ADJ, CARBON 22K (REC BIAS)

< RELAY >

RY31 1-515-803-11 RELAY

< TRANSFORMER >

T51 1-406-417-11 COIL, BIAS OSCILLATION
 T81 1-433-381-11 TRANSFORMER, BIAS OSCILLATOR

Ref. No.	Part No.	Description	Remark
T91	1-433-381-11	TRANSFORMER, BIAS OSCILLATOR	

< CONNECTOR >

* TP81 1-568-449-11 HOUSING, CONNECTOR(PC BOARD)3P

* 1-634-841-14 SW-A BOARD

3-343-419-01 HOLDER (S SENSER A)

< CONNECTOR >

* CNP81 1-568-852-11 SOCKET, CONNECTOR 9P

< IC >

IC81 8-719-710-03 DIODE NJL5165K-B

< RESISTOR >

R81	1-249-414-11	CARBON	560	5%	1/4W
R82	1-247-818-11	CARBON	300	5%	1/4W
R83	1-247-834-11	CARBON	1.3K	5%	1/4W
R84	1-249-417-11	CARBON	1K	5%	1/4W
R85	1-249-408-11	CARBON	180	5%	1/4W

< SWITCH >

S81 1-571-958-11 SWITCH, PUSH (1 KEY)(STOP)

S82 1-571-281-21 SWITCH, LEAF (CrO2)

S83 1-571-281-21 SWITCH, LEAF (METAL)

S84 1-571-281-21 SWITCH, LEAF (REC A)

S85 1-571-281-21 SWITCH, LEAF (REC B)

S86 1-571-281-21 SWITCH, LEAF (HALF)

* A-2006-786-A SYSTEM CONTROL BOARD, COMPLETE

* 1-533-213-31 HOLDER, FUSE

* 1-562-327-00 SOCKET, CONNECTOR 3P

< CAPACITOR >

C101	1-124-907-11	ELECT	10uF	20%	50V
C102	1-136-157-00	FILM	0.022uF	5%	50V
C103	1-130-471-00	MYLAR	0.001uF	5%	50V
C104	1-130-475-00	MYLAR	0.0022uF	5%	50V
C105	1-130-475-00	MYLAR	0.0022uF	5%	50V

C106	1-130-475-00	MYLAR	0.0022uF	5%	50V
------	--------------	-------	----------	----	-----

C107	1-136-174-00	FILM	0.56uF	5%	50V
------	--------------	------	--------	----	-----

C108	1-136-171-00	FILM	0.33uF	5%	50V
------	--------------	------	--------	----	-----

C109	1-124-907-11	ELECT	10uF	20%	50V
------	--------------	-------	------	-----	-----

C110	1-124-907-11	ELECT	10uF	20%	50V
------	--------------	-------	------	-----	-----

SYSTEM CONTROL

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description		Remark	
C111	1-136-157-00	FILM	0.022uF	5%	50V	C808	1-164-159-11	CERAMIC	0.1uF	50V
C121	1-124-903-11	ELECT	1uF	20%	50V	C809	1-164-159-11	CERAMIC	0.1uF	50V
C122	1-123-382-00	ELECT	3.3uF	20%	100V	C810	1-124-907-11	ELECT	10uF	20% 50V
C123	1-124-465-00	ELECT	0.47uF	20%	50V					
C151	1-123-382-00	ELECT	3.3uF	20%	100V					
C201	1-124-907-11	ELECT	10uF	20%	50V					
C202	1-136-157-00	FILM	0.022uF	5%	50V	* CN505	1-568-828-11	SOCKET, CONNECTOR 9P		
C203	1-130-471-00	MYLAR	0.001uF	5%	50V	* CN607	1-580-782-11	CONNECTOR, BOARD TO BOARD		
C204	1-130-475-00	MYLAR	0.0022uF	5%	50V	* CN901	1-580-782-11	CONNECTOR, BOARD TO BOARD		
C205	1-130-475-00	MYLAR	0.0022uF	5%	50V	* CN902	1-580-782-11	CONNECTOR, BOARD TO BOARD		
						* CN903	1-580-782-11	CONNECTOR, BOARD TO BOARD		
C206	1-130-475-00	MYLAR	0.0022uF	5%	50V					
C207	1-136-174-00	FILM	0.56uF	5%	50V	* CNP501	1-564-337-00	PIN, CONNECTOR 3P		
C208	1-136-171-00	FILM	0.33uF	5%	50V	* CNP502	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
C209	1-124-907-11	ELECT	10uF	20%	50V	* CNP503	1-691-916-11	CONNECTOR, BOARD TO BOARD		
C210	1-124-907-11	ELECT	10uF	20%	50V	* CNP504	1-691-916-11	CONNECTOR, BOARD TO BOARD		
						* CNP505	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
C211	1-136-157-00	FILM	0.022uF	5%	50V					
C221	1-124-903-11	ELECT	1uF	20%	50V	* CNP506	1-564-337-61	PIN, CONNECTOR 3P		
C222	1-123-382-00	ELECT	3.3uF	20%	100V	* CNP507	1-580-784-11	CONNECTOR, BOARD TO BOARD		
C223	1-124-465-00	ELECT	0.47uF	20%	50V	* CNP508	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
C251	1-123-382-00	ELECT	3.3uF	20%	100V	* CNP601	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
						* CNP702	1-564-340-00	PIN, CONNECTOR 6P		
C501	1-124-907-11	ELECT	10uF	20%	50V					
C502	1-124-907-11	ELECT	10uF	20%	50V	* CNP801	1-580-784-11	CONNECTOR, BOARD TO BOARD		
C503	1-126-233-11	ELECT	22uF	20%	50V	* CNP802	1-580-784-11	CONNECTOR, BOARD TO BOARD		
C504	1-124-907-11	ELECT	10uF	20%	50V	* CNP803	1-580-784-11	CONNECTOR, BOARD TO BOARD		
C505	1-124-907-11	ELECT	10uF	20%	50V					
C521	1-124-907-11	ELECT	10uF	20%	50V	< DIODE >				
C541	1-124-034-51	ELECT	33uF	20%	16V	D151	8-719-987-63	DIODE	1N4148M	
C551	1-162-217-31	CERAMIC	56PF	5%	50V	D152	8-719-933-33	DIODE	HZS6A1L	
C552	1-161-494-00	CERAMIC	0.022uF		25V	D251	8-719-987-63	DIODE	1N4148M	
C553	1-162-217-31	CERAMIC	56PF	5%	50V	D252	8-719-933-33	DIODE	HZS6A1L	
						D545	8-719-987-63	DIODE	1N4148M	
C554	1-124-925-11	ELECT	2.2uF	20%	100V					
C555	1-124-925-11	ELECT	2.2uF	20%	100V	D701	8-719-200-77	DIODE	10E2N	
C701	1-124-563-11	ELECT	2200uF	20%	25V	D702	8-719-200-77	DIODE	10E2N	
C702	1-124-563-11	ELECT	2200uF	20%	25V	D703	8-719-200-77	DIODE	10E2N	
C703	1-124-477-11	ELECT	47uF	20%	25V	D704	8-719-200-77	DIODE	10E2N	
						D705	8-719-200-77	DIODE	10E2N	
C704	1-124-473-11	ELECT	1000uF	20%	10V					
C705	1-124-473-11	ELECT	1000uF	20%	10V	D706	8-719-200-77	DIODE	10E2N	
C706	1-124-927-11	ELECT	4.7uF	20%	100V	D707	8-719-933-33	DIODE	HZS6A1L	
C708	1-124-907-11	ELECT	10uF	20%	50V	D708	8-719-001-15	DIODE	UZL-9M2	
C709	1-124-472-11	ELECT	470uF	20%	10V	D709	8-719-000-78	DIODE	UZL-7L2	
						D710	8-719-200-77	DIODE	10E2N	
C710	1-124-122-11	ELECT	100uF	20%	50V					
C711	1-164-159-11	CERAMIC	0.1uF		50V	D711	8-719-987-63	DIODE	1N4148M	
C712	1-124-910-11	ELECT	47uF	20%	50V	D712	8-719-987-63	DIODE	1N4148M	
C802	1-161-494-00	CERAMIC	0.022uF		25V	D713	8-719-000-93	DIODE	UZL-7H1	
C803	1-124-907-11	ELECT	10uF	20%	50V	D714	8-719-987-63	DIODE	1N4148M	
						D715	8-719-933-36	DIODE	HZS6B1L	
C804	1-124-907-11	ELECT	10uF	20%	50V					
C805	1-164-159-11	CERAMIC	0.1uF		50V	D801	8-719-200-77	DIODE	10E2N	
C806	1-126-176-11	ELECT	220uF	20%	10V	D802	8-719-987-63	DIODE	1N4148M	
C807	1-162-288-31	CERAMIC	330PF	10%	50V	D803	8-719-987-63	DIODE	1N4148M	

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
< INDICATOR TUBE >			
FL901	1-519-713-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC501	8-752-059-55	IC CXA1331S	
IC502	8-752-055-61	IC CXA1578P	
IC503	8-759-000-48	IC MC14052BCP	
IC504	8-759-945-58	IC RC4558P	
IC505	8-759-945-58	IC RC4558P	
IC506	8-759-634-51	IC M5218AP	
IC701	8-759-945-58	IC RC4558P	
IC801	8-759-065-44	IC M50940-395SP	
IC802	8-759-803-42	IC LA6500-FA	
IC901	8-741-100-48	IC SBX1610-59	
< JACK >			
J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)	
J502	1-568-519-41	JACK, LARGE TYPE (HEADPHONES)	
< FILTER >			
LPP101	1-231-388-00	FILTER, LOW PASS	
LPP201	1-231-388-00	FILTER, LOW PASS	
< TRANSISTOR >			
Q101	8-729-900-89	TRANSISTOR DTC144ES	
Q102	8-729-900-80	TRANSISTOR DTC114ES	
Q103	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q201	8-729-900-89	TRANSISTOR DTC144ES	
Q202	8-729-900-80	TRANSISTOR DTC114ES	
Q203	8-729-142-25	TRANSISTOR 2SD1020-HFE	
Q521	8-729-900-80	TRANSISTOR DTC114ES	
Q522	8-729-900-89	TRANSISTOR DTC144ES	
Q531	8-729-900-61	TRANSISTOR DTA114ES	
Q532	8-729-900-80	TRANSISTOR DTC114ES	
Q541	8-729-900-65	TRANSISTOR DTA144ES	
Q542	8-729-900-89	TRANSISTOR DTC144ES	
Q551	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q701	8-729-141-83	TRANSISTOR 2SA473	
Q702	8-729-209-15	TRANSISTOR 2SD2012	
Q703	8-729-900-74	TRANSISTOR DTC143TS	
Q704	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q705	8-729-209-15	TRANSISTOR 2SD2012	
Q706	8-729-900-74	TRANSISTOR DTC143TS	
Q707	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q708	8-729-140-04	TRANSISTOR 2SB1116A-L	
Q802	8-729-900-80	TRANSISTOR DTC114ES	
Q803	8-729-900-65	TRANSISTOR DTA144ES	
Q804	8-729-620-05	TRANSISTOR 2SC2603-EF	

Ref. No.	Part No.	Description	Remark
Q805	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q806	8-729-900-65	TRANSISTOR DTA144ES	
Q807	8-729-900-61	TRANSISTOR DTA114ES	
Q808	8-729-900-80	TRANSISTOR DTC114ES	
Q809	8-729-801-84	TRANSISTOR 2SB1013-4	
Q810	8-729-119-76	TRANSISTOR 2SA1175-HFE	
< RESISTOR >			
R101	1-249-417-11	CARBON 1K 5%	1/4W
R102	1-249-421-11	CARBON 2.2K 5%	1/4W
R103	1-247-887-00	CARBON 220K 5%	1/4W
R104	1-249-423-11	CARBON 3.3K 5%	1/4W
R105	1-247-887-00	CARBON 220K 5%	1/4W
R106	1-249-423-11	CARBON 3.3K 5%	1/4W
R107	1-249-428-11	CARBON 8.2K 5%	1/4W
R108	1-247-864-11	CARBON 24K 5%	1/4W
R109	1-249-414-11	CARBON 560 5%	1/4W
R110	1-249-421-11	CARBON 2.2K 5%	1/4W
R111	1-249-421-11	CARBON 2.2K 5%	1/4W
R112	1-249-432-11	CARBON 18K 5%	1/4W
R113	1-249-425-11	CARBON 4.7K 5%	1/4W
R121	1-249-429-11	CARBON 10K 5%	1/4W
R122	1-249-423-11	CARBON 3.3K 5%	1/4W
R141	1-249-433-11	CARBON 22K 5%	1/4W
R142	1-249-417-11	CARBON 1K 5%	1/4W
R151	1-249-434-11	CARBON 27K 5%	1/4W
R152	1-247-868-11	CARBON 36K 5%	1/4W
R153	1-247-870-11	CARBON 43K 5%	1/4W
R154	1-249-408-11	CARBON 180 5%	1/4W
R161	1-249-432-11	CARBON 18K 5%	1/4W
R162	1-249-421-11	CARBON 2.2K 5%	1/4W
R163	1-247-854-11	CARBON 9.1K 5%	1/4W
R164	1-249-409-11	CARBON 220 5%	1/4W
R165	1-249-432-11	CARBON 18K 5%	1/4W
R201	1-249-417-11	CARBON 1K 5%	1/4W
R202	1-249-421-11	CARBON 2.2K 5%	1/4W
R203	1-247-887-00	CARBON 220K 5%	1/4W
R204	1-249-423-11	CARBON 3.3K 5%	1/4W
R205	1-247-887-00	CARBON 220K 5%	1/4W
R206	1-249-423-11	CARBON 3.3K 5%	1/4W
R207	1-249-428-11	CARBON 8.2K 5%	1/4W
R208	1-247-864-11	CARBON 24K 5%	1/4W
R209	1-249-414-11	CARBON 560 5%	1/4W
R210	1-249-421-11	CARBON 2.2K 5%	1/4W
R211	1-249-421-11	CARBON 2.2K 5%	1/4W
R212	1-249-432-11	CARBON 18K 5%	1/4W
R213	1-249-425-11	CARBON 4.7K 5%	1/4W
R221	1-249-429-11	CARBON 10K 5%	1/4W

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R222	1-249-423-11	CARBON	3.3K 5% 1/4W	R705	1-249-419-11	CARBON	1.5K 5% 1/4W
R241	1-249-433-11	CARBON	22K 5% 1/4W	R706	1-249-429-11	CARBON	10K 5% 1/4W
R242	1-249-417-11	CARBON	1K 5% 1/4W	R707	1-249-419-11	CARBON	1.5K 5% 1/4W
R251	1-249-434-11	CARBON	27K 5% 1/4W	R708	1-249-425-11	CARBON	4.7K 5% 1/4W
R252	1-247-868-11	CARBON	36K 5% 1/4W	R709	1-249-409-11	CARBON	220 5% 1/4W
R253	1-247-870-11	CARBON	43K 5% 1/4W	R710	1-249-417-11	CARBON	1K 5% 1/4W
R254	1-249-408-11	CARBON	180 5% 1/4W	R711	1-249-427-11	CARBON	6.8K 5% 1/4W
R261	1-249-432-11	CARBON	18K 5% 1/4W	R712	1-249-427-11	CARBON	6.8K 5% 1/4W
R262	1-249-421-11	CARBON	2.2K 5% 1/4W	R713	1-249-417-11	CARBON	1K 5% 1/4W
R263	1-247-854-11	CARBON	9.1K 5% 1/4W	R714	1-247-838-00	CARBON	2K 5% 1/4W
R264	1-249-409-11	CARBON	220 5% 1/4W	R715	1-249-421-11	CARBON	2.2K 5% 1/4W
R265	1-249-432-11	CARBON	18K 5% 1/4W	R716	1-249-429-11	CARBON	10K 5% 1/4W
R501	1-249-417-11	CARBON	1K 5% 1/4W	R717	1-249-436-11	CARBON	39K 5% 1/4W
R502	1-215-455-00	METAL	27K 1% 1/6W	R718	1-249-433-11	CARBON	22K 5% 1/4W
R503	1-249-429-11	CARBON	10K 5% 1/4W	R719	1-249-441-11	CARBON	100K 5% 1/4W
R521	1-215-455-00	METAL	27K 1% 1/6W	R801	1-249-432-11	CARBON	18K 5% 1/4W
R522	1-249-429-11	CARBON	10K 5% 1/4W	R802	1-249-423-11	CARBON	3.3K 5% 1/4W
R523	1-249-421-11	CARBON	2.2K 5% 1/4W	R803	1-249-435-11	CARBON	33K 5% 1/4W
R524	1-249-433-11	CARBON	22K 5% 1/4W	R804	1-249-435-11	CARBON	33K 5% 1/4W
R525	1-247-854-11	CARBON	9.1K 5% 1/4W	R805	1-247-903-00	CARBON	1M 5% 1/4W
R526	1-247-846-11	CARBON	4.3K 5% 1/4W	R806	1-249-435-11	CARBON	33K 5% 1/4W
R527	1-249-425-11	CARBON	4.7K 5% 1/4W	R807	1-249-435-11	CARBON	33K 5% 1/4W
R528	1-249-425-11	CARBON	4.7K 5% 1/4W	R808	1-249-435-11	CARBON	33K 5% 1/4W
R532	1-249-417-11	CARBON	1K 5% 1/4W	R809	1-249-435-11	CARBON	33K 5% 1/4W
R534	1-247-836-11	CARBON	1.6K 5% 1/4W	R812	1-249-429-11	CARBON	10K 5% 1/4W
R535	1-249-426-11	CARBON	5.6K 5% 1/4W	R813	1-249-435-11	CARBON	33K 5% 1/4W
R541	1-247-850-11	CARBON	6.2K 5% 1/4W	R814	1-249-435-11	CARBON	33K 5% 1/4W
R542	1-247-862-11	CARBON	20K 5% 1/4W	R815	1-249-435-11	CARBON	33K 5% 1/4W
R543	1-249-428-11	CARBON	8.2K 5% 1/4W	R816	1-249-429-11	CARBON	10K 5% 1/4W
R545	1-249-425-11	CARBON	4.7K 5% 1/4W	R817	1-247-862-11	CARBON	20K 5% 1/4W
R546	1-247-838-00	CARBON	2K 5% 1/4W	R818	1-249-433-11	CARBON	22K 5% 1/4W
R551	1-249-441-11	CARBON	100K 5% 1/4W	R819	1-249-430-11	CARBON	12K 5% 1/4W
R552	1-249-429-11	CARBON	10K 5% 1/4W	R820	1-249-433-11	CARBON	22K 5% 1/4W
R553	1-249-441-11	CARBON	100K 5% 1/4W	R821	1-249-433-11	CARBON	22K 5% 1/4W
R554	1-249-428-11	CARBON	8.2K 5% 1/4W	R822	1-249-405-11	CARBON	100 5% 1/4W
R555	1-249-441-11	CARBON	100K 5% 1/4W	R823	1-249-429-11	CARBON	10K 5% 1/4W
R556	1-249-423-11	CARBON	3.3K 5% 1/4W	R824	1-249-413-11	CARBON	470 5% 1/4W
R557	1-249-441-11	CARBON	100K 5% 1/4W	R825	1-249-403-11	CARBON	68 5% 1/4W
R558	1-249-429-11	CARBON	10K 5% 1/4W	R826	1-249-422-11	CARBON	2.7K 5% 1/4W
R559	1-249-429-11	CARBON	10K 5% 1/4W	R827	1-249-422-11	CARBON	2.7K 5% 1/4W
R560	1-249-417-11	CARBON	1K 5% 1/4W	R828	1-249-422-11	CARBON	2.7K 5% 1/4W
R561	1-249-431-11	CARBON	15K 5% 1/4W	R830	1-249-405-11	CARBON	100 5% 1/4W
R562	1-249-436-11	CARBON	39K 5% 1/4W	R831	1-249-405-11	CARBON	100 5% 1/4W
R601	1-249-429-11	CARBON	10K 5% 1/4W	R832	1-249-405-11	CARBON	100 5% 1/4W
R602	1-249-435-11	CARBON	33K 5% 1/4W	R833	1-249-405-11	CARBON	100 5% 1/4W
R701	1-249-425-11	CARBON	4.7K 5% 1/4W	R901	1-249-420-11	CARBON	1.8K 5% 1/4W
R702	1-249-420-11	CARBON	1.8K 5% 1/4W	R902	1-249-423-11	CARBON	3.3K 5% 1/4W
R703	1-249-426-11	CARBON	5.6K 5% 1/4W	R903	1-249-426-11	CARBON	5.6K 5% 1/4W
R704	1-249-427-11	CARBON	6.8K 5% 1/4W	R904	1-249-429-11	CARBON	10K 5% 1/4W

SYSTEM CONTROL

Ref. No.	Part No.	Description	Remark
R905	1-249-435-11	CARBON	33K 5% 1/4W
R906	1-249-420-11	CARBON	1.8K 5% 1/4W
R907	1-249-423-11	CARBON	3.3K 5% 1/4W
R908	1-249-426-11	CARBON	5.6K 5% 1/4W
R909	1-249-429-11	CARBON	10K 5% 1/4W
R910	1-249-429-11	CARBON	10K 5% 1/4W

< VARIABLE RESISTOR >

RV121	1-238-600-11	RES, ADJ, CARBON 10K (REC GAIN)
RV221	1-238-600-11	RES, ADJ, CARBON 10K (REC GAIN)
RV501	1-241-820-11	RES, VAR, CARBON 50K/50K (REC LEVEL)
RV502	1-241-821-11	RES, VAR, CARBON 50K/50K (BALANCE)
RV503	1-241-822-11	RES, VAR, CARBON 5K (BIAS)

< SWITCH >

S501	1-692-063-11	SWITCH, ROTARY (DOLBY NR)
S601	1-554-118-00	SWITCH, PUSH (1 KEY) (POWER)
S602	1-571-520-11	SWITCH, SLIDE (DIRECTION)
S901	1-554-303-21	SWITCH, TACTILE (PAUSE)
S902	1-554-303-21	SWITCH, TACTILE (▷)
S904	1-554-303-21	SWITCH, TACTILE (◁)
S905	1-554-303-21	SWITCH, TACTILE (REC MUTE)
S906	1-554-303-21	SWITCH, TACTILE (RESET)
S907	1-554-303-21	SWITCH, TACTILE (MEMORY)
S908	1-554-303-21	SWITCH, TACTILE (■)
S909	1-554-303-21	SWITCH, TACTILE (◁◁)
S910	1-554-303-21	SWITCH, TACTILE (▷▷)
S911	1-554-303-21	SWITCH, TACTILE (REC)

< CONNECTOR >

* TP801 1-564-505-11 PLUG, CONNECTOR 2P

< CRYSTAL >

X801 1-577-358-21 VIBRATOR, CERAMIC

MISCELLANEOUS

1	1-575-781-11	WIRE, FLAT TYPE (9 CORE)
△6	1-555-795-00	CORD, POWER, EULO PLUG (AEP)
△6	1-558-945-11	CORD, POWER (POLAR.SPT-1)(US,Canadian)
103	1-638-983-11	PC BOARD, MOTOR FLEXIBLE
△F701	1-532-285-00	FUSE, TIME-LAG (AEP)
△F701	1-532-741-11	FUSE, GLASS TUBE (US,Canadian)
△F702	1-532-285-00	FUSE, TIME-LAG (AEP)
△F702	1-532-741-11	FUSE, GLASS TUBE (US,Canadian)
M1	X-3359-417-1	MOTOR ASSY, CAPSTAN
M2	X-3363-501-1	MOTOR ASSY, REEL

Ref. No.	Part No.	Description	Remark
△T901	1-450-750-11	TRANSFORMER, POWER (AEP)	
△T901	1-450-751-11	TRANSFORMER, POWER (US,Canadian)	

ACCESSORIES & PACKING MATERIALS

1-558-271-11	CORD, CONNECTION
* 3-350-830-01	CUSHION
* 3-376-443-81	INDIVIDUAL CARTON
3-755-327-11	MANUAL, INSTRUCTION (Canadian,AEP) (ENGLISH/FRENCH/SPANISH/PORTUGUESE)
3-755-327-21	MANUAL, INSTRUCTION (US,Canadian) (ENGLISH)
3-755-327-41	MANUAL, INSTRUCTION (AEP) (GERMAN/DUTCH/SWEDISH/ITALIAN)

HARDWARE LIST

#1	7-682-548-09	SCREW +BVTT 3X8 (S)
#2	7-682-547-04	SCREW +BVTT 3X6 (S)
#3	7-621-849-00	SCREW (BV/RING)
#4	7-621-773-95	SCREW +BVTT 2.6X6 (S)
#5	7-685-134-19	SCREW (+ PTPWH)(2.6X8)
#6	7-621-775-00	SCREW +B 2.6X3
#7	7-627-556-08	SCREW +P 2.6X2.8

Note:
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par une marque △ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.